AMERICAN NURSERYMAN

The Nurseryman's Forte: To Make America More Beautiful and Fruitful

NOVEMBER 15, 1940

Clematis Paniculata

More Glamorous Hedges
Rooting Rose Cuttings with Chemical
Uses of Narrow-leaved Evergreens
Excerpts from a Plantsman's Notebook

AMERICAN NURSERYMAN

F. R. KILNER, Editor

Editorial

PLANTING FOR SAFETY.

The landscape designer, while aiming at beauty, must keep in mind utility. In the latter connection should be considered the element of safety.

Too often, for the sake of privacy, a high hedge is carried clear to the point where a driveway opens on a street or highway. It requires a careful driver to come to a dead stop; the careless driver who does not stop runs the risk of endangering lives.

At driveway entrances, street or highway corners, curves in driveways and other similar places, care should be taken not to place trees or shrubs of such size as will obstruct the view of drivers. In home grounds, especially, it is necessary to be mindful of possible risks to be run by children at play, and to guard against the possibility of their running or stepping in front of automobiles from behind hedges or other obstructions to their view.

CONSTRUCTIVE FORCE.

Good advertising is most frequently pictured as a means of getting orders—to move merchandise and get dollars in return.

To be effective, it must do that. It enables manufacturers to move their goods through jobbers and dealers to consumers. It makes it possible for the grower of nursery stock to move his trees and shrubs and turn them into cash.

But any reader of newspapers and magazines, looking through the advertising pages with a studious eye, will find the most far-reaching and the most effective advertising to be that which guides the consumer, the ultimate buyer, in determining his or her needs. It gives information and makes possible the selection of that merchandise which is most suited to the buyer's purposes and pocketbook.

Advertising as a means of just getting the orders relies upon a market already established by buyers who know all about what you seek to sell. But that market is too limited for the constructive advertiser. He undertakes to inform, educate and advise the possible buyer. In this role, good advertising is one of the most constructive and educational forces in American business. It has made the United States a land of automobiles, telephones, bathtubs and other accompaniments of a higher standard of living. It is a constructive force that can do the same thing for plants and gardens if we will use it for that purpose.

The Mirror of the Trade

FRUIT OUTLOOK.

Production of eight major tree fruits — peaches, cherries, plums, prunes, apricots, pears, grapes and summer apples—for the year 1940-41 will probably be twelve per cent smaller than their total production in 1939-40, according to the bureau of agricultural economics of the United States Department of Agriculture.

The small commercial apple crop in 1940, compared with 1939, and an anticipated increase in the incomes of consumers are price-stimulating factors which probably will more than offset the depressing effects on apple prices of the anticipated large production of competing citrus fruits and the loss of the greater portion of the apple export market.

The number of apple trees of bearing age has decreased at a greater rate than the acreage of bearing trees during the past thirty years. The relatively greater decrease in number of trees has been caused by normal mortality, the removal of unprofitable trees and loss from droughts and freezes. The decrease in the number of apple trees of bearing age will probably continue at a slightly accelerating rate for the next five or ten years, assuming average weather conditions, but it is expected that total production of apples will continue to decline at only a moderate rate. If new plantings are not made in substantial numbers during the next ten years, the number of bearing apple trees will be materially reduced between 1940 and 1960.

There has been an upward trend in the production of sour cherries, which will probably continue at a moderate rate because of the large proportion of young trees, although new plantings have been practically negligible in recent years. The upward trend in the production of sweet cherries will probably continue at a somewhat more rapid rate, since a greater percentage of such trees have yet to reach the full bearing stage.

In peach production the upward trend in all of the important producing regions is expected to continue during the next few years. Growers have been generally optimistic, and large plantings have been made.

The indicated production of Bartlett pears in the Pacific coast states corresponds fairly closely to that of last year, but prices have been somewhat below those of 1939. The rapid increase in the number of bearing trees on the Pacific coast from 1910 to 1930 was more than offset by a decrease in tree numbers in all the other regions of the country. The trend of production, however, is upward.

The estimate of the acreage of strawberries is 212,780 acres, or seven per cent greater than last year and twenty per cent above the 10-year average.

Total production of grapes is indicated to be about the same as last year.

CORNELL ARBORETUM.

Cornell University's long-planned arboretum at Ithaca, N. Y., receives another boost this fall with two gifts of plants numbering 1,500, which will be planted in permanent locations throughout the arboretum area by members of a C. C. C. camp.

The two gifts are made up of 1,000 valuable plants assembled for many years by the university's department of floriculture from botanical gardens, the United States Department of Agriculture and the bureau of plant importation, and 500 plants from the Morris arboretum, at Philadelphia. The latter is composed of plants which do not exist in regular nursery trade and will be used as a source of stock for propagation in the arboretum.

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RETURNS PLEASE ADVERTISERS

"You might like to know we have had a nice lot of inquiries and a lot of sales from the little advertisement we placed with you."—E. L. Vennard, Manager, Cutler & Vennard Nursery, Sioux City, Ia., November 8.

BECAUSE MAGAZINE PLEASES READERS

"Enclosed find one dollar for which please send me the American Nurseryman for another year. Yours is one of the finest publications I have seen—also the most instructive. Keep up the good work."—Paul G. Cochran, Cochran Landscape Service, Saegertown, Pa., November 6.

"Enclosed find one dollar for renewal of subscription for the American Nurseryman for one year. We have been most pleased with your magazine and tremendously appreciate its value."—H. Floyd Ameele, Manager, Rock-Manor Gardens, Williamson, N. Y., November 5.

More Glamorous Hedges

Plants of Distinction for Flowers, Foliage and Fruits Available for Landscape Use to Supplant Common Species Long Used in Hedges—By Edwin Matthews

For perhaps a quarter of a century, whenever the question of a boundary hedge was discussed, the first plant that came to mind was California privet. Did the customer have any doubt about what the choice should be, this doubt would be quickly dispelled after consulting the local nurseryman. Invariably he would prescribe California privet, Ibota privet or Regel's privet; so the customer was sure to get one or another of this valuable but much abused group of plants.

After a while, when the sound of the hedge shears became as monotonous as the hum of the bees, and the upkeep was "no honey," folks began to look around for something more interesting, more beautiful and requiring less labor in upkeep.

The next step was Japanese barberry, and in this delightfully attractive plant we had something that embodied protection, grace and beauty, yet withal demanded little care and labor to keep it in order. All of which was a step in the right direction, was it not? And so we have had a period wherein this plant has often replaced the erstwhile privet.

Of course, other kinds of plants, too, were brought into play and we have beautiful flowering hedges of lilac, althæa and spiræa of sorts. These, while not always advisable for every position, filled a desire in the hearts of the garden owner for something different.

Spiræa Vanhouttei did give us a beautiful floral effect, but only for short duration in the spring. Lilacs, too, though welcome plants to all of us in the early spring, with the fragrance of the flowers, show, however, a lack-luster in late summer and fall, when invariably the foliage is marred by the appearance of mildew. Then, too, unless wise and judicious pruning is exercised, the plants grow up to be leggy and we see little of the flowers except from a stepladder.

Just in recent years there have come to be used for hedges of distinction some plants whose qualifications place them in a class by themselves, for in addition to flowers and clean and attractive foliage, they possess remarkable beauty in handsome fruits that afford color in the landscape at a time when we most appreciate it.

Who that has seen the evergreen firethorn, pyracantha, will not concede a place of honor for it? While it is perhaps seen more often as a solitary specimen or group plant, it nevertheless finds a use as hedge plant, as shown in the illustration on page 6, from a photograph, which was taken in the winter. The numerous panicles of fruit still retained their orange-scarlet color, which against its persistent foliage, stands out in relief.

Another plant that deserves a place of honor and which can be used as a graceful hedge plant is Cotoneaster floccosa, whose lustrous persistent foliage, accompanied by innumerable red berries, proclaim it a real treasure for winter attraction. The illustration shows it used in close formation, and the plants when photographed in January were apparently none the worse for winter frosts and snows to which they had been exposed.

Other members of this wonderful family of plants lend themselves to use in hedges of distinction, among which we would recommend Cotoneaster salicifolia, C. Henryana and C. Francheti, all possessing attrac-

Lustrous Persistent Foliage and Innumerable Red Berries Commend Cotoneaster Floccosa as Hedge Plant.

tive foliage and fruits during the fall and winter months.

We live in an age when color is demanded, and these plants with a flair for the spotlight are now available to all who desire the unusual.

CLEMATIS PANICULATA.

The genus clematis constitutes one of our most important groups of flowering vines. The sweet autumn clematis, Clematis paniculata, is one of the most common and most popular clematis. This is no doubt due to a considerable extent to the fact that this hardy clematis is a vigorous grower and quite attractive in flower. It will climb to a height of thirty feet or more, bearing attractive compound leaves composed of from three to five leaflets. The leaflets are dark green and glabrous and remain on the plant until late fall or early winter.

The white flowers are produced abundantly in many-flowered clusters from August to October. The flowers are fragrant and are certainly the most attractive of any fall-flowering vine. The plumose fruits add a pleasing sight after the flowers fall.

The small-flowered clematis, of which the sweet autumn clematis is an example, are not as exacting in their cultural requirements as the large-flowering types. Given a limestone, well drained soil, they grow satisfactorily. Propagation is from seeds.

Such vines as Clematis paniculata compose one of our most useful and interesting groups of plants. Few landscape plantings are executed that do not require one or more vines. The sweet autumn clematis can be used on porches, where it will provide privacy and add a touch of color in late summer and fall. It likewise can be used on arbors, trellises and fences effectively. It is a native of Japan. L. C. C.

POLLINATION OF PLUMS.

The new American-Japanese plums tend to be more or less difficult to satisfy with pollen. A number of valued varieties are almost useless as pollinizers. Among these is Tokata. On the other hand, its close relative, Kaga, is an excellent pollinizer for such varieties as Hennepin, Superior and Waneta. Kaga is good on Elliott, La Crescent, Red Wing and Underwood. At the Minnesota state fruit breeding farm, Kaga is selected to pollinize early-blooming varieties, South Dakota 27 for midseason and Surprise for late-blooming plums.

The two sisters of Kaga, Hanska and Toka, are considered bearers of effective pollen. The two best known prairie sand cherry-plum hybrids, Sapa and Opata, readily cross-pollinize. This condition is evidenced in the fruit breeding work at the Morden station. A number of Opata seedlings have the deep purplish-red flesh and firmer texture characterized by the Sapa.

A grower planning a commercial orchard of hybrid plums prudently gives thought to interpollinizer relationships. A planting of Radisson, Tecumseh, Underwood, Red Wing and La Crescent might be only lightly fruitful. The inclusion of an occasional tree of Kaga, McRobert, Mina, Mordena and Surprise would probably change the plantation into heavy fruitfulness.

TWISTED LEAVES HANG ON.

Numerous brown leaves with badly twisted leaf stalks found on some red oaks in New Canaan, Conn., July, 1939, were found on examination to be leaves developed the year before. The leaf stalks were so badly twisted that the fibrovascular tissues were exposed, and the remains were quite suggestive of small pieces of manila twine. This unusual condition was believed to be one of the minor results of the hurricane.

To learn why these twisted leaves should hang long beyond the period for a normal shedding of foliage, 168 leaf stalks were twisted by hand, at the Bartlett tree research laboratories, Stamford, Conn. January 10, 1940, fifty-one of these leaves were still hanging on the trees and the stubs of leaf stalks of ninety-five others remained attached to the twigs. Observations in April and again in August showed numbers of these stubs of twisted leaf stalks still adhering to the twigs. In view of the fact that the artificial twisting must have approximated that which was caused by the storm, it is believed the experiment demonstrates that interruption of sap circulation in the leaf stalk was caused by the twisting and this in turn prevented the normal shedding of the leaves with twisted stems.

Boundary Hedge of Evergreen Firethorn, or Pyracantha, Against a Background of Pines.

Rooting Rose Cuttings with Chemicals

Summary of Results in Rose Propagation with the Use of Root-inducing Substances at the Boyce Thompson Institute for Plant Research—By Henry Kirkpatrick, Jr.

Many requests have come to the Boyce Thompson Institute for information on the propagation of roses. Results relating to the use of root-inducing substances for rooting cuttings of commercial varieties of roses, as well as many other species, were reported by A. E. Hitchcock and P. W. Zimmerman in recent issues of the Contributions from Boyce Thompson Institute. A summary of the results with roses appears to be desirable at this time. Many species and varieties of roses were tested, and the results indicate that rose cuttings respond well when treated with the correct strengths of the root-inducing substances.

Of the many known substances, indolebutyric acid was found to be the most effective for root induction on rose cuttings and is recommended for general use. Powder preparations (indolebutyric acid in talc) and water solutions (indolebutyric acid in water) were both used with success. In the water solutions the concentrations or strengths are expressed as milligrams of indolebutyric acid per liter (approximately one quart) of water (mg./l.). In the powder or talc preparations the concentrations are expressed as milligrams of the indolebutyric acid per gram of talc (mg./g.). In order to determine the optimum strength for good rooting a range of concentrations was used in each test, together with a control lot. Talc was the control used for the powder preparations and tap water the control for the solutions. Basal ends of the cuttings were moistened before dipping into the powder preparations.

After treatment the cuttings were planted either in a shaded greenhouse or in coldframes. No heat was supplied during the summer months, but heat was necessary at other times of the year. Low temperatures reduced the activity of the root-inducing substance, and little or no effect was noticeable at temperatures below 60 degrees Fahrenheit. Air temperatures ranging from 60 to 80 proved to be the best for quick rooting. The rooting medium used was a two-thirds sand and one-third German peat moss mixture. However, sand alone will prove satisfactory. The medium was placed loosely in the bench and was not packed or tamped before or after the cuttings were planted. The cuttings were planted on a slant, rather than upright, so that the leaves lay flat upon or close to the surface of the rooting medium. This position increased the humidity around the leaves and kept them in a good turgid condition. If leaves of rose cuttings became dried and dropped off while the cuttings were in the propagating bench, a lower percentage of rooting was noticeable. In many instances a slight yellowing of the leaves on the cuttings resulted from treatment, particularly with the higher concentrations of the growth substance. This condition in no way interfered with good rooting or subsequent growth of the plant.

Results of tests indicated that concentration requirements were generally low for all roses. The time of year the cuttings were taken was a controlling factor for good rooting on many of the outdoor varieties. For the greenhouse varieties cuttings from canes of flowering wood taken just after the flowers started dropping their petals were found to respond best to treatments. On treated rose cuttings rooting occurred in from two to three weeks' time. A greater number of roots, arising from the base and from stem tissue above the base, were induced and a higher percentage of rooted cuttings was ensured by the correct treatment (figure 1). Year-old powder preparations of indolebutyric acid which were in open containers and had been used continuously throughout the year were compared with freshly prepared mixtures. No difference in effectiveness was found between the two preparations (figure 2).

Figure 1. Briarcliff rose cuttings 15 days after treatment. Left, cuttings not treated. Right, cuttings treated with indolebutyric acid.

Hybrid Teas, Garden Varieties.

The hybrid teas, particularly the garden varieties, showed much variation in their response to root-inducing substances. Some varieties rooted well when treated; others showed little or no rooting. J. H. Beale, director of the Boyce Thompson Arboretum, has done considerable work the past two summers on the rooting of garden hybrids, using indolebutyric acid preparations. His results in the summer of 1938 showed that treated cuttings of a large number of varieties rooted much better, with a higher percentage of rooting, than cuttings not treated. He found that best results were obtained if the cuttings were taken in August in this locality. In the summer of 1939 he worked only with Pernetiana hybrid cuttings, but found that no effect of treatment was noticeable on these varieties.

Following is a list of garden hybrids that responded well to either two and one-half milligrams of indolebutyric acid per liter of water or

two milligrams of indolebutyric acid per gram of finely ground talc:

Betty Uprichard
Catalonia
Christopher Stone
Condessa de Sastago
Duquesa de Penaranda
Editor McFarland
Etoile de Hollande
Golden Dawn
Little Beauty
Margaret McGredy
Mme. J. Perraud
Mrs. E. P. Thom
Pink Pearl
President H. Hoover
Radiant Beauty
Sir Henry Seagrave
Texas Centennial
Warrawee

Cuttings of the above varieties were taken in August from flowering shoots. Treatments increased the percentage of rooting in many cases as much as fifty per cent. All cuttings rooted with treatment grew as well as cuttings rooted without treatment.

Hybrid Teas, Greenhouse Varieties.

Briarcliff, Hollywood and Good Luck were the principal greenhouse hybrid varieties used in the tests. Three-node cuttings taken from flowering shoots proved to be the best type of cutting to use. Cuttings from the basal portion of the cane or shoot responded better than cuttings from the upper portion. Basal leaves and terminal leaflets on the remaining leaves were removed. The basal cut was made in the internode below the bud. After the cuttings were rooted they were potted in a loose, friable soil and held in a humid atmosphere until the plants became established. Records were kept of the growth of rooted cuttings in relation to the number of roots on the cutting before potting. It was found that cuttings with twenty-five or more roots, as in figure 3, were delayed in top growth and in many cases died after potting.

Indolebutyric acid, naphthaleneacetic acid and indoleacetic acid were used in the various tests. Naphthaleneacetic acid and indoleacetic acid were less active than indolebutyric acid in the concentrations used. Indolebutyric acid was very effective and had to be used in extremely low concentrations for good results. A 1 to 2-milligram per gram powder dip treatment, or a 1.25 to 2.5 milligram per liter solution treatment for twenty-four hours worked well. By increasing the strength of indolebutyric acid an increase in the number of roots could be induced up to a point where the basal portion of the cutting was injured (figure 4). Rooting, induced by the correct treatment, occurred in from fifteen to twenty days. It usually took from three weeks to one month before a good root system developed on the cuttings not treated. A greater number of roots were induced by treatment and a more uniform rooting response took place. Treated cuttings were grown for two years along with grafted plants of approximately the same age, and a careful record was kept of their flower yield and general performance. Little difference could be noted between the flower yield of the grafted plants and the plants grown from treated cuttings.

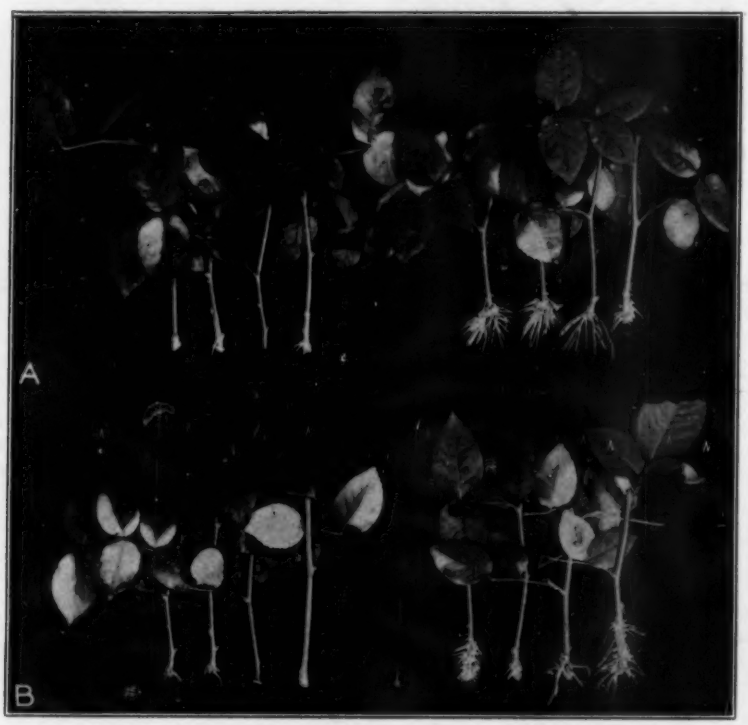

Figure 2. Briarcliff rose cuttings 18 days after treatment. Left, cuttings dipped in pure talc before planting. Right, cuttings dipped in a 2-milligram of indolebutyric acid per gram of talc powder preparation. A. One-year-old powder preparation exposed to air and used continuously throughout the year. B. Freshly prepared powder preparation.

Climbers and Creepers.

Numerous varieties of climbers and creepers were rooted successfully with treatment. Leafy cuttings, taken in July and August, proved to be more readily rooted than those taken at other times of the year. Dormant cuttings responded poorly. Concentration requirements for most species were low. Cuttings treated with the correct strength of idolebutyric acid had a greater number of roots and showed a higher percentage of rooting than cuttings not treated. Following is a list of varieties successfully propagated from cuttings with either a 5 mg./l. solution treatment for twenty-four hours or a 2 mg./g. powder dip treatment:

Coral Creeper
Dr. W. Van Fleet
Elegance
Frederick S. Peck
Golden Climber
Golden Glow
Paul's Scarlet
Peggy Ann Landon

All above-mentioned varieties were very sensitive to the idolebutyric acid, and stronger treatments than those recommended caused injury to the stem and in many cases killing of the cutting. Rosa Hugonis proved to be an exception. Concentrations two or more times stronger than those recommended above were necessary to induce root formation. Little rooting occurred in the control lots of Rosa Hugonis. Treated cuttings of the climbers and creepers have been grown for the past three years and have performed normally in every respect.

Rosa Multiflora.

In the spring of 1939 a rather elaborate field test was run in coöperation with Mr. Beale on dormant

cuttings of Rosa multiflora, a species used widely as an understock. The cuttings were prepared by Mr. Beale and given to us for treatment. One lot was treated and then stored for one month in moist peat moss at a constant temperature of 40 degrees. Another lot was stored for one month under the same conditions without being treated and then was treated before planting in the field. Cuttings not treated were included in each lot as controls. In the fall of 1939 these cuttings were taken up and examined. No effect of treatment in either the percentage of rooting or in the number of roots on the cuttings was noticeable. This was due to the low temperatures at which the cuttings were held and planted. In contrast, dormant cuttings planted in a warm greenhouse (65 to 75 degrees) after treatment showed a favorable response to a 2 mg./g. powder dip treatment or a 5 to 10 mg./l. solution treatment of indolebutyric acid for twenty-four hours. Leafy cuttings of Rosa multiflora taken in the summer and fall responded exceptionally well to the same concentrations as recommended for the dormant cuttings.

Conclusion.

Cuttings of roses, including garden and greenhouse hybrids and climbers and creepers, responded well to treatments with indolebutyric acid. Larger root systems, more uniform stands of rooted cuttings and a higher percentage of rooted cuttings were induced by the correct application of the substance. The Pernetiana hybrids proved to be very difficult to root and more experimental work needs to be done with these hybrids before treatments can be recommended. A 2-milligram per gram powder dip treatment worked well on cuttings of most of the roses. A 1.25-milligram to 5-milligram per liter solution treatment for twenty-four hours was very effective, the concentration depending upon the variety. Naphthaleneacetic acid and indoleacetic acid were not so effective as indolebutyric acid for practical propagation of rose cuttings. Low temperatures (particularly below 60 degrees) decreased considerably the effectiveness of the substances, and unless dormant cuttings were held or planted at high temperatures (65 to 75 degrees) after treatment, no effect of treatment was noticeable. Rose plants are sensitive to atmospheric and temperature conditions, and growers in localities having different climatic conditions from the New York city area might have to modify recommended methods to get successful results. Treated cuttings performed normally in every respect when grown and compared with grafted plants or with plants grown from cuttings not treated.

Figure 3. Briarcliff rose cuttings. Left, cuttings not treated. Right, cuttings with too many roots induced by treatment with too high a concentration of indolebutyric acid.

MICHIGAN DECISION.

Decision was rendered November 4 by the Michigan unemployment compensation commission on an application from the Greening Nursery Co., Monroe, Mich., last February, with regard to the services of three classes of employees, those employed in the nursery and also planting stock off the premises, those who perform landscaping entirely off the premises and those who sell nursery stock on a straight commission basis away from the nursery firm's places of business.

The text of the decision is lengthy, citing various applicable regulations and decisions. The verdict was that the individuals employed on the nursery farm who likewise perform services for the firm off the premises are not "in employment" as defined by the act, nor are those individuals who act as sales representatives for the firm, being free from its control and usually engaged in some other occupation. But those employees who are engaged entirely in landscaping and transplanting trees outside the petitioner's premises, but subject to its control and direction, are "in employment" within the meaning of the act and therefore subject to the unemployment compensation act.

Figure 4. Crimson Rambler rose cuttings showing the effect of increasing concentrations of indolebutyric acid. Left to right: Control, indolebutyric acid solutions 5 mg./l., 10 mg./l. and 20 mg./l. for 24 hours.

Uses of Narrow-leaved Evergreens

Lists According to Habit of Growth, Culture and Uses of Recommended Plants in Articles on "Selection of Narrow-leaved Evergreens," Concluded from October 15 Issue—By L. C. Chadwick

In the articles dealing with the selection of woody narrow-leaved evergreens it has been necessary to limit the discussions pertaining to the uses of the plants selected and their adaptability to various environmental conditions. The following lists have been prepared as an aid to the use of these plants and to afford a source of information to which one may turn to find plants suitable for definite purposes.

These lists are not intended to be all-inclusive. They include, in the judgment of the compiler, many of the best of the woody narrow-leaved evergreens for the various conditions given and when used under Ohio conditions or in regions where environmental conditions are similar. For the most part the choice is limited to the selected plants in each size group. Where the plants in the secondary list are especially suitable for some purpose, or exhibit outstanding characteristics, they are included in these lists. The genera, species, varieties and forms omitted are usually not so suitable for general use, because of less effective habit of growth and foliage or more exacting cultural conditions or because they are exceptionally rare in the trade.

For lists on habit of growth and culture, refer to October 15 issue.

D. USE

(1) Plants for dry sandy soils

Group 2
Juniperus communis montana (nana)
Juniperus conferta
Juniperus horizontalis alpina
Juniperus horizontalis douglasi
Group 3
Juniperus horizontalis plumosa
Pinus mugo mughus (selected)
Group 4
Pinus densiflora umbraculifera
Pinus sylvestris nana
Group 5
Chamæcyparis pisifera filifera
Pinus mugo (montana)
Group 6
Juniperus chinensis keteleeri
Group 7
Pinus banksiana
Pinus ponderosa
Pinus resinosa
Pinus rigida
Pinus sylvestris
Pinus virginiana

(2) Plants for wet soils

Group 2
Juniperus horizontalis alpina
Juniperus horizontalis douglasi
Group 3
Juniperus horizontalis plumosa
Juniperus virginiana globosa
Thuja occidentalis hoveyi
Thuja occidentalis umbraculifera
Thuja occidentalis woodwardi
Group 4
Chamæcyparis pisifera filifera nana
Group 5
Chamæcyparis pisifera filifera
Thuja occidentalis rosenthali
Thuja plicata atrovirens
Group 6
Chamæcyparis thyoides andelyensis
Juniperus chinensis keteleeri
Juniperus virginiana (selected)
Thuja occidentalis fastigiata (pyramidalis)
Thuja plicata
Group 7
Abies balsamea
Picea glauca cœrulea
Pinus nigra
Pinus ponderosa
Pinus strobus
Tsuga canadensis

(3) Plants for heavy clay soils

Group 3
Pinus mugo mughus (selected)
Thuja occidentalis hoveyi
Thuja occidentalis woodwardi
Group 4
Juniperus chinensis pfitzeriana
Juniperus sabina von ehron
Group 5
Thuja occidentalis rosenthali
Thuja occidentalis robusta
Group 6
Juniperus chinensis columnaris (No. 18755)
Juniperus chinensis keteleeri
Thuja occidentalis fastigiata (pyramidalis)
Thuja plicata
Group 7
Abies nordmanniana
Abies veitchi
Pinus banksiana
Pinus ponderosa
Pinus resinosa
Pinus rigida
Pinus strobus
Tsuga canadensis

(4) Plants that are drought resistant

Group 2
Juniperus chinensis sargenti
Juniperus communis montana (nana)
Juniperus conferta
Juniperus horizontalis alpina
Juniperus horizontalis douglasi
Juniperus horizontalis procumbens
Juniperus sabina prostrata hilli
Juniperus squamata prostrata
Group 3
Juniperus chinensis pfitzeriana compacta
Juniperus chinensis pfitzeriana plumosa
Juniperus horizontalis plumosa
Pinus mugo mughus (selected)
Group 4
Juniperus chinensis pfitzeriana
Juniperus sabina von ehron
Pinus densiflora umbraculifera
Pinus sylvestris nana
Group 5
Pinus mugo (montana)
Thuja plicata atrovirens
Group 6
Juniperus chinensis columnaris (No. 18755)
Juniperus chinensis keteleeri
Juniperus chinensis mas
Juniperus virginiana canaerti
Pinus sylvestris fastigiata
Thuja plicata
Group 7
Pinus banksiana
Pinus cembra
Pinus nigra
Pinus ponderosa
Pinus resinosa
Pinus rigida
Pinus sylvestris
Pinus virginiana
Pseudotsuga taxifolia glauca

(5) Plants for congested city districts

Group 2
Juniperus chinensis sargenti
Juniperus horizontalis douglasi
Group 3
Juniperus horizontalis plumosa
Pinus mugo mughus (selected)
Taxus cuspidata densa
Taxus cuspidata nana
Group 4
Juniperus chinensis pfitzeriana
Pinus sylvestris nana
Taxus cuspidata intermedia
Taxus media andersoni
Taxus media hatfieldi
Taxus media wellesleyana
Group 5
Chamæcyparis pisifera filifera
Taxus cuspidata (selected)
Taxus cuspidata columnaris
Taxus media hicksi
Group 6
Juniperus chinensis columnaris (No. 18755)
Juniperus chinensis keteleeri
Juniperus virginiana canaerti
Pinus sylvestris fastigiata
Taxus cuspidata (capitata)
Group 7
Pinus nigra
Pinus resinosa
Pinus sylvestris
Pseudotsuga taxifolia glauca

(6) Plants for exposed lake front conditions

Group 2
Juniperus chinensis sargenti
Juniperus communis montana (nana)
Juniperus horizontalis alpina
Juniperus horizontalis Bar Harbor
Juniperus horizontalis douglasi
Group 3
Juniperus horizontalis plumosa
Pinus mugo mughus (selected)
Taxus cuspidata densa
Taxus cuspidata nana
Group 4
Juniperus chinensis pfitzeriana
Taxus cuspidata intermedia
Taxus media hatfieldi
Taxus media wellesleyana
Group 5
Chamæcyparis obtusa gracilis
Chamæcyparis pisifera filifera
Taxus cuspidata (selected)
Taxus cuspidata columnaris
Taxus media hicksi
Group 6
Juniperus chinensis columnaris (No. 18755)
Juniperus chinensis keteleeri
Juniperus chinensis mas
Juniperus virginiana canaerti
Taxus cuspidata (capitata)
Thuja plicata

Group 7
Picea omorika
Pinus cembra
Pinus nigra
Pinus resinosa
Pinus sylvestris
Pseudotsuga taxifolia glauca

(7) Plants for seaside planting

Group 2
Juniperus chinensis sargenti
Juniperus communis montana (nana)
Juniperus conferta
Juniperus horizontalis Bar Harbor
Juniperus horizontalis douglasi
Group 3
Juniperus horizontalis plumosa
Pinus mugo mughus (selected)
Taxus cuspidata nana
Group 4
Juniperus chinensis pfitzeriana
Taxus cuspidata intermedia
Taxus media hatfieldi
Group 5
Chamæcyparis pisifera filifera
Taxus cuspidata (selected)
Taxus media hicksi
Group 6
Juniperus chinensis keteleeri
Juniperus virginiana canaerti
Taxus cuspidata (capitata)
Group 7
Picea glauca cœrulea
Picea omorika
Picea pungens moerheimi
Pinus banksiana
Pinus nigra
Pinus resinosa
Pinus rigida
Pinus sylvestris
Pseudotsuga taxifolia glauca

(8) Plants subject to winter injury

Note: Exposed situation in regions similar to central Ohio.
Group 2
Taxus canadensis
Group 3
Chamæcyparis obtusa compacta
Group 4
Chamæcyparis obtusa nana compacta
Thuja orientalis aurea
Group 5
Chamæcyparis obtusa crippsi
Taxus baccata fastigiata
Taxus baccata washingtoni
Group 6
Chamæcyparis lawsoniana allumi
Chamæcyparis lawsoniana glauca
Chamæcyparis nootkatensis
Cryptomeria japonica lobbi
Libocedrus decurrens
Sciadopitys verticillata
Group 7
Abies cephalonica
Abies nordmanniana
Pinus griffithi (excelsa)

(9) Plants for shade conditions beneath trees and north of buildings

Note: Plants followed by letter (P) should not be given complete shade.

(a) Tolerate shade and wet soil conditions

Group 2
Juniperus horizontalis alpina (P)
Juniperus horizontalis douglasi (P)
Taxus canadensis
Group 3
Juniperus horizontalis plumosa (P)
Thuja occidentalis hoveyi (P)
Thuja occidentalis woodwardi (P)
Group 4
Chamæcyparis pisifera filifera nana (P)
Group 5
Chamæcyparis pisifera filifera (P)
Thuja occidentalis rosenthali (P)
Thuja plicata atrovirens (P)
Group 6
Juniperus chinensis keteleeri (P)
Thuja occidentalis fastigiata (pyramidalis) (P)
Thuja plicata
Group 7
Tsuga canadensis

(b) Tolerate shade and dry soil conditions

Group 2
Juniperus horizontalis alpina (P)
Juniperus horizontalis douglasi (P)
Group 3
Juniperus horizontalis plumosa (P)
Pinus mugo mughus (selected) (P)
Group 5
Chamæcyparis pisifera filifera (P)
Group 6
Juniperus chinensis keteleeri (P)

(c) Normal soil conditions

Note: Those in (a) and (b) above are also satisfactory under normal conditions.
Group 3
Taxus baccata repandens
Taxus canadensis stricta
Taxus cuspidata densa
Taxus cuspidata minima
Taxus cuspidata nana
Tsuga canadensis nana (Bennett spreading hemlock)
Tsuga canadensis densiflora (Von Helms hemlock)
Tsuga canadensis globosa (Curtis perfect globe hemlock)
Group 4
Chamæcyparis obtusa nana gracilis (P)
Juniperus chinensis pfitzeriana (P)
Juniperus sabina von ehron (P)
Taxus cuspidata intermedia
Taxus media andersoni
Taxus media browni
Taxus media hatfieldi
Taxus media wellesleyana
Tsuga canadensis compacta (selected)
Tsuga canadensis globosa (erecta) (Laurie hemlock)
Group 5
Chamæcyparis obtusa gracilis (P)
Taxus baccata fastigiata
Taxus baccata washingtoni
Taxus cuspidata (selected)
Taxus cuspidata columnaris
Taxus media hicksi
Tsuga canadensis globosa (Geneva hemlock)
Tsuga canadensis pendula (sargenti)
Group 6
Chamæcyparis nootkatensis (P)
Sciadopitys verticillata (P)
Taxus cuspidata (capitata)
Tsuga canadensis compacta (pyramidalis) (Coplen pyramidal hemlock)
Tsuga canadensis compacta (Stranger hemlock)
Group 7
Tsuga caroliniana
Tsuga diversifolia

(10) Foundation plantings

(a) Entrance plants

Group 3
Chamæcyparis obtusa compacta
Juniperus chinensis globosa (Shosmith juniper)
Juniperus virginiana globosa
Picea excelsa gregoryana
Picea excelsa maxwelli
Pinus mugo mughus (selected)
Taxus baccata repandens
Taxus cuspidata densa
Taxus cuspidata nana
Thuja occidentalis hoveyi
Thuja occidentalis woodwardi
Tsuga canadensis nana (Bennett spreading hemlock)
Group 4
Chamæcyparis obtusa nana gracilis
Taxus cuspidata intermedia
Taxus media browni
Taxus media wellesleyana
Tsuga canadensis compacta (selected)

(b) Other than entrance plants

Note: Many of the entrance plants can be used elsewhere in the foundation planting.
Group 2
Juniperus chinensis sargenti
Juniperus horizontalis Bar Harbor
Juniperus horizontalis procumbens
Juniperus procumbens
Group 3
Juniperus chinensis pfitzeriana compacta
Juniperus chinensis pfitzeriana plumosa
Juniperus horizontalis plumosa
Juniperus sabina tamariscifolia
Taxus baccata repandens
Group 4
Juniperus chinensis pfitzeriana
Taxus media andersoni
Taxus media hatfieldi
Tsuga canadensis globosa (erecta) (Laurie hemlock)
Group 5
Chamæcyparis obtusa gracilis
Chamæcyparis pisifera filifera
Taxus cuspidata (selected)
Taxus cuspidata columnaris
Taxus media hicksi
Thuja occidentalis rosenthali
Thuja plicata atrovirens
Group 6
Juniperus chinensis columnaris (No. 18755)
Juniperus chinensis keteleeri
Juniperus chinensis mas
Juniperus virginiana canaerti
Juniperus virginiana pyramidiformis hilli
Taxus cuspidata (capitata)
Thuja occidentalis (fastigiata) pyramidalis
Thuja plicata
Tsuga canadensis compacta (pyramidalis) (Coplen pyramidal hemlock)

(11) Border planting
Screen planting to hide objectionable views and to provide excellent foliage for background planting

Group 5
Chamæcyparis obtusa gracilis
Taxus media hicksi
Thuja occidentalis rosenthali
Thuja plicata atrovirens
Group 6
Chamæcyparis lawsoniana allumi
Chamæcyparis nootkatensis
Juniperus chinensis keteleeri
Juniperus virginiana canaerti
Sciadopitys verticillata
Taxus cuspidata (capitata)
Thuja occidentalis (selected)
Thuja occidentalis douglasi pyramidalis (spiralis)
Thuja occidentalis fastigiata (pyramidalis)
Thuja plicata
Tsuga canadensis compacta (pyramidal) (Coplen pyramidal hemlock)
Group 7
Picea omorika
Picea orientalis
Pinus koraiensis
Pinus peuce
Pinus resinosa
Pinus strobus
Pinus sylvestris
Pseudotsuga taxifolia glauca
Tsuga canadensis
Tsuga caroliniana
Tsuga diversifolia

(12) Plants for refined lawn areas (groups or specimens)

Group 2
Juniperus chinensis sargenti
Juniperus horizontalis procumbens
Juniperus procumbens

Group 3
Juniperus chinensis pfitzeriana compacta
Juniperus chinensis pfitzeriana plumosa
Juniperus horizontalis plumosa
Juniperus sabina tamariscifolia
Taxus baccata repandens
Taxus cuspidata densa
Taxus cuspidata nana
Thuja occidentalis pumila
Thuja occidentalis woodwardi
Tsuga canadensis densiflora (Von Helms hemlock)
Tsuga canadensis globosa (Curtis perfect globe hemlock)
Tsuga canadensis nana (Bennett spreading hemlock)
Group 4
Juniperus chinensis pfitzeriana
Taxus cuspidata intermedia
Taxus media andersoni
Taxus media browni
Taxus media hatfieldi
Taxus media wellesleyana
Tsuga canadensis globosa (erecta) (Laurie hemlock)
Group 5
Chamæcyparis obtusa gracilis
Chamæcyparis pisifera filifera
Taxus cuspidata (selected)
Taxus cuspidata columnaris
Taxus media hicksi
Thuja plicata atrovirens
Tsuga canadensis pendula (sargenti)
Group 6
Chamæcyparis lawsoniana allumi
Chamæcyparis nootkatensis
Juniperus chinensis keteleeri
Juniperus virginiana burki
Juniperus virginiana canaerti
Juniperus virginiana pyramidiformis hilli
Juniperus virginiana smithi
Sciadopitys verticillata
Taxus cuspidata (capitata)
Thuja plicata
Tsuga canadensis compacta (pyramidalis) (Coplen pyramidal hemlock)
Group 7 (group planting)
Pinus cembra
Pinus koraiensis
Pinus strobus
Pseudotsuga taxifolia glauca
Tsuga canadensis
Tsuga caroliniana

(13) Hedges

(a) Low, sheared
Group 3
Taxus canadensis stricta
Taxus cuspidata densa
Taxus cuspidata nana
Thuja occidentalis woodwardi

(b) Low, unsheared
Group 3
Taxus cuspidata densa
Thuja occidentalis pumila

(c) High, sheared
Group 4
Taxus cuspidata intermedia
Taxus media hedgeform
Taxus media wellesleyana
Group 5
Chamæcyparis pisifera filifera
Taxus cuspidata (selected)
Taxus cuspidata columnaris
Taxus media hicksi
Thuja occidentalis rosenthali
Group 6
Juniperus chinensis keteleeri
Juniperus virginiana canaerti
Taxus cuspidata (capitata)
Thuja occidentalis (selected)
Thuja occidentalis fastigiata (pyramidalis)
Thuja plicata
Tsuga canadensis compacta (pyramidalis) (Coplen pyramidal hemlock)
Group 7
Picea orientalis
Pinus resinosa
Pinus strobus
Pseudotsuga taxifolia glauca
Tsuga canadensis
Tsuga caroliniana

(d) High, unsheared
Group 4
Taxus media hatfieldi
Group 5
Taxus cuspidata columnaris
Taxus media hicksi
Group 6
Pinus sylvestris fastigiata
Thuja occidentalis fastigiata (pyramidalis)
Tsuga canadensis compacta (pyramidalis) (Coplen pyramidal hemlock)

(e) Shade enduring
Group 3
Taxus canadensis stricta
Taxus cuspidata densa
Taxus cuspidata nana
Group 4
Taxus cuspidata intermedia
Taxus media hedgeform
Taxus media wellesleyana
Group 5
Taxus cuspidata (selected)
Taxus cuspidata columnaris
Taxus media hicksi
Group 6
Taxus cuspidata (capitata)
Tsuga canadensis compacta (pyramidalis) (Coplen pyramidal hemlock)
Group 7
Tsuga canadensis
Tsuga caroliniana

(14) Plants suitable for rock garden planting
Group 2
Juniperus chinensis sargenti
Juniperus horizontalis Bar Harbor
Juniperus horizontalis procumbens
Juniperus procumbens
Juniperus sabina prostrata hilli
Juniperus scopulorum prostrata
Group 3
All plants in selected list, group 3
Group 4
Chamæcyparis obtusa nana gracilis
Chamæcyparis pisifera filifera nana
Juniperus chinensis pfitzeriana
Picea glauca conica
Pinus sylvestris nana
Taxus media browni
Tsuga canadensis compacta (selected)

(15) Spreading plants for covering banks and rough places
Group 2
Juniperus chinensis sargenti
Juniperus communis montana (nana)
Juniperus conferta
Juniperus horizontalis
Juniperus horizontalis alpina
Juniperus horizontalis Bar Harbor
Juniperus horizontalis douglasi
Juniperus procumbens
Juniperus sabina prostrata hilli
Juniperus scopulorum prostrata
Juniperus squamata prostrata
Taxus canadensis (shade)

(16) Plants for growing in tubs for formal use
Group 3
Juniperus chinensis globosa (Shosmith juniper)
Juniperus virginiana globosa
Pinus mugo mughus (selected)
Taxus baccata repandens
Taxus cuspidata densa
Taxus cuspidata nana
Thuja occidentalis hoveyi
Thuja occidentalis pumila
Thuja occidentalis woodwardi
Group 4
Chamæcyparis obtusa nana gracilis
Taxus cuspidata intermedia
Taxus media browni
Taxus media hatfieldi
Tsuga canadensis compacta (selected)
Group 5
Taxus cuspidata columnaris
Taxus media hicksi
Tsuga canadensis pendula (sargenti)
Group 6 (small plants)
Juniperus chinensis columnaris (No. 18755)
Juniperus chinensis keteleeri
Juniperus virginiana canaerti
Sciadopitys verticillata
Thuja occidentalis fastigiata (pyramidalis)

(17) Plants for winter porch boxes
Group 3
Juniperus horizontalis plumosa
Pinus mugo mughus (selected)
Taxus cuspidata nana
Thuja occidentalis hoveyi
Thuja occidentalis pumila
Thuja occidentalis woodwardi
Group 4 (small plants)
Taxus cuspidata intermedia
Taxus media andersoni
Thuja orientalis aurea
Group 5 (small plants)
Chamæcyparis pisifera filifera
Juniperus communis hibernica
Taxus cuspidata
Thuja occidentalis rosenthali
Thuja occidentalis robusta
Group 6 (small plants)
Juniperus chinensis columnaris
Juniperus chinensis mas
Juniperus virginiana canaerti
Thuja occidentalis fastigiata (pyramidalis)
Thuja plicata
Group 7
Picea abies (excelsa)
Pseudotsuga taxifolia

(18) Plants for alleys
Group 5
Taxus cuspidata columnaris
Taxus media hicksi
Group 6
Juniperus chinensis columnaris (No. 18755)
Juniperus chinensis keteleeri
Juniperus virginiana canaerti
Libocedrus decurrens
Pinus sylvestris fastigiata
Taxus cuspidata (capitata)
Thuja occidentalis fastigiata (pyramidalis)
Tsuga canadensis compacta (pyramidalis) (Coplen pyramidal hemlock)
Group 7
Abies concolor
Abies nordmanniana
Picea omorika
Picea orientalis
Pinus cembra
Pinus koraiensis
Pinus peuce
Pseudotsuga taxifolia glauca

(19) Trees for street planting

Note: Evergreens do not make satisfactory street trees within city limits. For outlying points the following occasionally may be used:
Group 7
Picea omorika
Pinus cembra
Pinus nigra
Pinus resinosa
Pinus strobus
Pinus sylvestris
Pseudotsuga taxifolia glauca
Tsuga canadensis

(20) Trees suitable as specimens for small lawns
Group 7
Abies nobilis glauca
Abies veitchi
Picea engelmanni
Picea omorika
Picea orientalis
Picea pungens moerheimi
Pinus cembra
Pinus koraiensis

Pinus peuce
Pinus strobus
Tsuga canadensis
Pinus caroliniana
Pinus diversifolia

(21) Trees suitable as specimens for large lawns, estates and parks

All plants on selected list in group 7

(22) Trees for groves or windbreaks

Group 7
Picea abies (excelsa)
Picea omorika
Picea orientalis
Pinus nigra
Pinus ponderosa
Pinus resinosa
Pinus strobus
Pinus sylvestris
Pseudotsuga taxifolia glauca
Tsuga canadensis

(23) Plants with important leaf characters

(a) Leaves normally dark green (limited mostly to plants in selected list)

Group 2
Taxus canadensis
Group 3
Chamæcyparis obtusa compacta
Juniperus virginiana globosa
Picea excelsa gregoryana
Pinus mugo mughus (selected)
Taxus baccata repandens
Taxus cuspidata densa
Taxus cuspidata nana
Tsuga canadensis nana (Bennett spreading hemlock)
Group 4
Chamæcyparis obtusa nana gracilis
Taxus cuspidata intermedia
Taxus media browni
Taxus media hatfieldi
Taxus media wellesleyana
Tsuga canadensis compacta (selected)
Tsuga canadensis globosa (erecta) (Laurie hemlock)
Group 5
Chamæcyparis obtusa gracilis
Taxus baccata fastigiata
Taxus cuspidata (selected)
Taxus cuspidata columnaris
Taxus media hicksi
Thuja occidentalis rosenthali
Tsuga canadensis pendula (sargenti)
Group 6
Cryptomeria japonica lobbi
Juniperus chinensis keteleeri
Juniperus virginiana canaerti
Libocedrus decurrens
Sciadopitys verticillata
Taxus cuspidata (capitata)
Thuja plicata
Tsuga canadensis compacta (pyramidalis) (Coplen pyramidal hemlock)
Group 7
Abies cephalonica
Abies nordmanniana
Abies veitchi
Picea omorika
Picea orientalis
Pinus cembra
Pinus koraiensis
Pinus nigra
Pinus ponderosa
Pinus resinosa
Pseudotsuga taxifolia
Tsuga canadensis
Tsuga canadensis atrovirens
Tsuga caroliniana
Tsuga diversifolia

(b) Leaves normally bluish, grayish or silvery-green

Group 2
Juniperus chinensis sargenti
Juniperus horizontalis alpina
Juniperus horizontalis Bar Harbor
Juniperus horizontalis douglasi
Juniperus horizontalis procumbens
Juniperus procumbens
Juniperus sabina prostrata hilli
Juniperus scopulorum prostrata
Juniperus squamata prostrata
Group 3
Juniperus chinensis globosa (Shosmith juniper)
Juniperus chinensis pfitzeriana compacta
Juniperus chinensis pfitzeriana plumosa
Juniperus horizontalis plumosa
Group 4
Juniperus chinensis pfitzeriana
Pinus strobus nana
Pinus sylvestris nana
Group 5
Chamæcyparis pisifera squarrosa
Juniperus chinensis pyramidalis
Juniperus squamata meyeri
Group 6
Chamæcyparis lawsoniana allumi
Juniperus chinensis columnaris (No. 18755)
Juniperus chinensis columnaris glauca
Juniperus scopulorum Blue Moon
Juniperus scopulorum Chandler Silver
Juniperus scopulorum hilli
Juniperus virginiana burki
Pinus sylvestris fastigiata
Group 7
Abies concolor
Abies nobilis glauca
Picea engelmanni glauca
Picea pungens moerheimi
Pinus strobus glauca
Pinus sylvestris argentea

(c) Leaves normally light or bright green

Group 2
Juniperus communis montana (nana)
Group 3
Thuja occidentalis hoveyi
Thuja occidentalis pumila
Thuja occidentalis woodwardi
Group 4
Taxus media andersoni
Group 6
Juniperus virginiana smithi

(d) Color cultivars (few good types)

Group 4
Taxus cuspidata aurescens
Thuja orientalis aurea
Group 5
Chamæcyparis obtusa crippsi
Chamæcyparis obtusa gracilis aurea
Chamæcyparis pisifera filifera aurea
Chamæcyparis pisifera squarrosa
Taxus baccata fastigiata aurea
Thuja occidentalis lutea
Thuja orientalis Kallay's Golden
Group 6
Chamæcyparis pisifera aurea
Juniperus chinensis columnaris glauca
Juniperus scopulorum Blue Moon
Juniperus scopulorum Chandler Silver
Juniperus scopulorum Moonlight
Juniperus virginiana burki
Juniperus virginiana elegantissima
Thuja occidentalis douglasi aurea
Group 7
Abies concolor argentea
Abies nobilis glauca
Cedrus atlantica glauca
Picea engelmanni glauca
Picea glauca cœrulea
Picea pungens argentea (kosteri)
Picea pungens hoopesi
Picea pungens moerheimi
Pinus parviflora glauca
Pinus strobus glauca
Pinus sylvestris argentea

(e) Plants with outstanding fall and winter colored foliage

Group 2
Juniperus horizontalis alpina
Juniperus horizontalis Bar Harbor
Juniperus horizontalis douglasi
Group 3
Juniperus horizontalis plumosa
Group 6
Juniperus virginiana pyramidiformis hilli

(24) Plants often having outstanding fruits

Group 2
Juniperus communis montana (nana)
Taxus canadensis
Group 3
Juniperus virginiana globosa
Taxus baccata repandens
Taxus cuspidata densa
Taxus cuspidata nana
Group 4
Taxus cuspidata intermedia
Taxus media hatfieldi
Taxus media kelseyi
Group 5
Taxus cuspidata (selected)
Taxus media hicksi
Group 6
Juniperus chinensis keteleeri
Juniperus virginiana canaerti
Juniperus virginiana (selected)
Taxus cuspidata (capitata)
Group 7
Abies
Cedrus
Picea
Pinus
Pseudotsuga
Tsuga

GEORGE E. PERRY.

George E. Perry, the new sales manager of Henry A. Dreer, Inc., Philadelphia, has been associated with the firm since 1926 except for about twelve months, and so has a well established foundation for his present work. The year he was away from the Dreer staff

George E. Perry.

was spent with the Mechling Bros. division of the General Chemical Co., manufacturer of insecticides and fungicides, in whose behalf he made contact with growers and seedsmen in the east and middle west.

He succeeds Jacques L. Legendre, who resigned recently and now has started his own nursery in Virginia.

THE contract for the beautification of the grounds of the Lexington federal building, Lexington, Ky., has been awarded to the Louisville Nurseries, Louisville.

Excerpts from a Plantsman's Notebook

Further Notes on the Culture, Propagation and Uses of Many Kinds of Plants Given Garden Trial in Years Past—By C. W. Wood

Saxifraga Longifolia.

(November 1, 1940.) Although Saxifraga longifolia is considered queen of the family by saxifrage enthusiasts, it can scarcely hope to win the affections of more than a minority of American gardeners at this stage of our evolution, horticulturally speaking. I say that in the face of its great beauty—beauty of rosette, which is made up of long, blue-gray leaves with handsome silver edges, and of flowering spikes as much as three feet in height bearing a pyramidal panicle of pure white flowers (never purple-spotted in specimens that I have grown, as the literature says they may be). That opinion is based on the unfortunate fact that American gardeners have not yet become sufficiently imbued with love of plants that they will go to the pains of growing one that dies after its first blooming; in other words, a monocarpic plant, like the subject of these notes, has little appeal for our busy gardeners.

We are fortunate, however, in having a form of longifolia, perhaps hybrid, known as variety Tumbling Waters, which has much of the beauty of the type, except that, as it has grown here, the rosettes lack some of the impressive size of longifolia, and it has acquired somewhere along the line the ability to make a cascade of rosettes (hence the name, Tumbling Waters) to carry on after the parent dies from the overexertion of blooming and seeding. (Perhaps I failed to make it clear before that type longifolia never makes offsets.)

Tumbling Waters, in my opinion, is a plant of inestimable value at our present stage of development. It will, in the first place, help to educate us to an appreciation of beauty, leading us away from the merely gaudy and showy. While doing that, it should be a big asset in the hands of neighborhood growers who will take the pains to handle and show it in the right way. It, as well as most incrusted saxifrages, likes a soil that is sharply drained and one that is not desert dry in summer. Most silvered kinds do well here in northern Michigan in an east wall or on a north slope and in a gravelly soil containing leaf mold. Longifolia and its variety really need a wall to show off their charms. Propagation of the type is by seeds, that of Tumbling Waters from cuttings, pulling off rosettes and rooting them in a shaded frame.

Johnny-jump-up.

(November 4, 1940.) Thanks to years of collecting and to the introduction of several small-flowered viola species into a shady section of the garden, I am the happy possessor of an extensive lot of Johnny-jump-ups. Having a lively curiosity in such matters, I have been interested in the reaction of visitors, especially amateur gardeners, to the plants, and from that source I have formed the opinion that the neighborhood grower is overlooking a good bet when he neglects these little violas.

The changes in gardeners' likes and dislikes which have replaced the pert little Johnny with the modern showy pansy have, at the same time, banished from a majority of gardens one of the most charming fixtures of old-time gardens. There is a place in the scheme of things for the pansy, of course, but there is nothing about the plant or its behavior that entitles it to exclusive attention. In the first place, the modern version of the pansy is not perfectly suited to the climate of eastern America, detesting the heat of our summers and demanding yearly renewal for best results. That makes a steady demand for pansy plants, of course, and is therefore a good source of income for commercial growers. But to allow them entirely to supplant Johnnies as they have, when the two plants serve entirely different purposes, seems absurd. Unlike the temperamental pansy, Johnny thrives in the face of adversity, sowing itself around the garden in utmost abandon and greeting the not-too-careful gardener from every nook and cranny.

Even the task of acquiring a collection of Johnnies is an adventure today. They are not generally articles of regular commerce to be obtained through ordinary trade channels. In fact, I rarely find one in nurseries, and I have had my eyes open for them for close to a quarter of a century, hoping that I should

find more of the color patterns mentioned in the old books. Rather, are they to be had by careful search of old gardens or of new gardens whose owners are interested in old things.

Sternbergia Lutea.

(October 2, 1939.) Old Count Caspar Sternberg may mean little to gardeners, but his namesake, sternbergia, especially in its form S. lutea, or, in common parlance, the autumn daffodil, is again making September a more joyous month for modern Americans who draw solace from their gardens. Even though it "was grown in the first gardens that man made," as one writer asserts and as others intimate, it has only recently reached American trade channels in any quantity after an almost complete absence of at least a generation. And judging from the type of dealers listing the plant, it may be assumed that much of the stock comes from foreign sources. That is not necessary, of course, for the bulbs are easily grown from seeds, as I proved to my own satisfaction a few years ago by flowering S. Fischeriana the third year after germination took place. Incidentally, the last-named is an unusual sternbergia, having reversed the usual habit of the genus by flowering in spring. It is like S. lutea except for its flowering season.

There seems to be no reason why our present plant, S. lutea, and the others, S. colchiciflora, S. Fischeriana and S. macrantha, if they can be found, should not make good property in the hands of the neighborhood growers. And it seems to me that they would make a profitable venture for large-scale production in the hands of specialists. Everything about the two kinds with which I am familiar, including their showy, cro-

cuslike yellow flowers and their ease of culture in sunny, well drained situations (they are said to prefer heavy soil, a point upon which I cannot speak with authority), points to these conclusions. They are to be grown from seeds, which are slow to germinate.

Chrysanthemum Balsamita.

(January 15, 1940.) I have lately been compiling a list of old-time favorite plants which have gone out of favor and am astonished by the number of really good things we are overlooking. Well up in the list of kinds which I am sure could be popularized again is Chrysanthemum Balsamita. Costmary was a favorite of the ancients, because, as one of them put it, of the "sweete sent and savour it casteth." That it could win the favor of moderns is not without the bounds of possibility. It is useful not only for its sweet scent, but also for its ample tufts of long, pale green foliage (Bible-leaf of grandmother's day, when the foot-long, fragrant leaves were used to mark favorite passages in the Bible) and for its tansylike heads on tall stems.

The actual height those tall stems attain will be largely governed by the care the plant receives. If the soil is fairly fertile and the plants are divided often, five feet or more (perhaps quite a little more in very rich soil) is not impossible. If a lower growth is needed, a less fertile soil and less frequent division will produce it. Its proper place, according to precedent, is in the herb garden, preferably in a sunny, well drained spot and, if convenient, in an enclosure from which its wandering roots cannot spread.

Thalictrum Dipterocarpum.

(December 23, 1939.) In a genus of lovely plants in which beautiful foliage is combined with graceful flowering habit, Thalictrum dipterocarpum stands out head and shoulders above its kin. Fortunate indeed is the gardener or the nurseryman who can grow this plant supremely well. For an idea of its landscape value when so handled, imagine bushy plants five feet tall (Dr. Wilson said they grew eight to ten feet high in western China, where he found the plant) which are clothed in the airy, ferny foliage of a meadow rue. But that is not half the story, for they reach a charming climax when each swaying branch hangs out a cloud of mauve flowers with conspicuous yellow anthers during August and September. Results like that are not to be had, however, without some effort.

As ordinarily grown, the plant reaches about two feet in height and is then little more than just another meadow rue, though it must be admitted that even then it is a good one. To attain the spectacular results mentioned in the preceding paragraph, one has to start with a rich, heavy soil. Heavy it must be, yet well drained, to ensure a successful passage through the winter and spring months. Although somewhat of a paradox, that condition may be attained by putting a foot of drainage material under about eighteen inches of heavy soil which has been thoroughly enriched with well rotted manure. On top of all that, the plants will need a good soaking at least once a week during dry weather. Reports of failures from gardeners with an acid soil also indicate a need for lime.

A schedule like the foregoing sounds formidable, you may say, and it will be if you have a light soil to start with. But the spectacular results in a sunny border would surely be worth the effort. All that bother is not necessary, however, to enjoy the plant, if one can be contented with 2-foot specimens, for they may be produced in ordinary, light, sandy soil. Propagation is generally from seeds, which should be sown outdoors in autumn.

Asperula Odorata.

(November 5, 1940.) While going over some old notes last night, I came upon the following, written I know not when or why, which I am including here with the hope that they will direct attention to a worthy plant now much neglected:

Unless you are one of the unfortunates who consider Asperula odorata beneath your dignity, this cheerful little perennial will, if given the opportunity, add to your happiness throughout the entire year. First, as a garden plant in a lightly shaded spot, it will bring delight for a month or two in spring and perhaps longer if dry weather does not overtake it, with cascades of small white flowers on stems six to eight inches in length. Then during the balance of the year the tender fragrance of the leaves, which gardeners have long likened to new-mown hay, will be there to remind you of a pleasant companion if you have gathered some of the stems against the time when winter has put the plants to sleep.

Fortunately, the plants do not resent the loss of some of their leaves, nor do the latter lose their fragrance after being cut and dried. "They are almost sweeter when dried," wrote Miss Jekyll, "each little whorl by itself, with the stalk cut closely away above and below. It is a pleasant surprise to come upon these fragrant little stars between the leaves of a book."

Campanula Lactiflora.

(November 5, 1940.) A correspondent, a neighborhood nurseryman, who took the advice printed in this column two or three years ago and added Campanula lactiflora to his offerings, complains that the plants grew less than two feet in height and were unattractive. In answer to him and as a warning to

[Concluded on page 19.]

ADVANCE OFFERINGS

Choice varieties of native plant material—deciduous ornamentals in lining-out sizes selected from our Fall 1940 Lining-Out Stock list. All stock is offered for shipment when graded about January 15. 5% discount allowed for cash with order, otherwise F. O.B. Naperville, Illinois. Packing charges are extra at cost.

250 plants of a variety at the thousand rate.

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Gleditsia tria. inermis, 12 to 18 ins.	12.50
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Populus bolleana, 3 to 4 ft.	30.00
Populus eugenei, 2 to 3 ft.	22.50
Populus nigra italica, 2 to 3 ft.	22.50
Prunus americana, 15 to 18 ins.	12.50
Prunus pennsylvanica, 12 to 18 ins.	20.00
Prunus serotina, 9 to 12 ins.	8.00
Quercus macrocarpa, 6 to 9 ins.	10.00
Quercus palustris, 6 to 9 ins.	15.00
Robinia pseudoacacia, 12 to 18 ins.	7.50
Salix alba niobe, 2 to 3 ft.	17.50
Salix babylonica dolorosa, 2 to 3 ft.	17.50
Salix discolor, 18 to 24 ins.	15.00
Salix pentandra, 2 to 3 ft.	10.00
Salix viteilina, 2 to 3 ft.	15.00
Salix vitellina britzensis, 18 to 24 ins.	15.00
Sorbus aucuparia, 12 to 15 ins.	17.50
Ulmus americana, 12 to 18 ins.	7.50

SHRUBS

Acanthopanax pentaphyllum, 8 to 12 ins.	$20.00
Berberis thunbergii, 6 to 9 ins.	6.00
Berberis thunbergii, 9 to 12 ins.	8.00
Berberis thunbergii, 12 to 18 ins.	12.50
Berberis thunbergii, 18 to 24 ins.	15.00
Berberis atropurpurea, 6 to 9 ins.	20.00
Berberis atropurpurea, 8 to 12 ins.	45.00
Berberis minor, 8 to 12 ins.	40.00
Cornus alba sibirica, 12 to 18 ins.	15.00
Cornus paniculata, 9 to 12 ins.	15.00
Cornus stol. flaviramea, 12 to 18 ins.	25.00
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Cotoneaster acutifolia, 6 to 10 ins.	37.50
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Forsythia suspensa, 12 to 18 ins.	30.00
Forsythia susp. fortunei, 12 to 18 ins.	20.00
Forsythia viridissima, 12 to 18 ins.	20.00
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Hydrangea arborescens grand., 12 to 18 ins.	40.00
Hydrangea paniculata grand., 12 to 18 ins.	45.00
Ligustrum amurense, 12 to 18 ins.	15.00
Ligustrum ibolium, 6 to 12 ins.	15.00
Ligustrum ibota regelianum, 6 to 12 ins.	35.00

Shrubs—Continued

	Per 1000
Ligustrum vulgare, 6 to 9 ins.	$ 7.50
Lonicera bella albida, 12 to 18 ins.	15.00
Lonicera fragrantissima, 12 to 18 ins.	15.00
Lonicera morrowi, 12 to 18 ins.	15.00
Lonicera tat. alba, 12 to 18 ins.	20.00
Lonicera tat. grandiflora, 12 to 18 ins.	15.00
Lonicera tat. rosea, 12 to 18 ins.	20.00
Lonicera tat. sibirica, 12 to 18 ins.	20.00
Lonicera zabeli, 12 to 18 ins.	30.00
Mahonia aquifolium, 4 to 6 ins.	25.00
Philadelphus coronarius, 12 to 18 ins.	20.00
Philadelphus cor. grand., 12 to 18 ins.	15.00
Philadelphus grandiflorus, 12 to 18 ins.	15.00
Philadelphus lemoinei, 12 to 18 ins.	27.50
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Physocarpus opulifolius, 18 to 24 ins.	12.50
Prunus virginiana, 6 to 9 ins.	15.00
Rhamnus cathartica, 9 to 12 ins.	7.50
Rhamnus frangula, 9 to 12 ins.	7.50
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Rosa wichuraiana, 6 to 9 ins.	10.00
Sambucus canadensis, 18 to 24 ins.	17.50
Sambucus pubens, 6 to 10 ins.	17.50
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Spiraea bum. froebeli, 6 to 12 ins.	20.00
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Spiraea thunbergii, 6 to 12 ins.	20.00
Spiraea vanhouttei, 6 to 12 ins.	12.50
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Syringa vulgaris, 6 to 12 ins.	12.50
Viburnum americanum, 8 to 12 ins.	30.00
Viburnum dentatum, 9 to 12 ins.	25.00
Viburnum lantana, 12 to 18 ins.	40.00
Viburnum opulus, 12 to 18 ins.	30.00
Viburnum opulus sterile, 6 to 9 ins.	30.00
Weigela Eva Rathke, 8 to 12 ins.	40.00
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Celastrus scandens, 12 to 18 ins.	15.00
Wisteria sinensis, 6 to 12 ins.	15.00

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NAPERVILLE NURSERIES, INC.

NAPERVILLE, ILLINOIS

AMERICAN ASSOCIATION OF NURSERYMEN

RICHARD P. WHITE, EXECUTIVE SECRETARY

636 SOUTHERN BLDG., WASHINGTON, D. C.

MEET WITH PLANT BOARD.

At the annual meeting of the National Plant Board, held at the Congress hotel, Chicago, November 11, representatives of the American Association of Nurserymen met to discuss the report of the trade barriers committee at the New York convention last July, including the proposal of a federal inspection tag. With Richard P. White, A. A. N. executive secretary, appeared Edwin J. Stark, vice-president; Miles W. Bryant, chairman of the legislative committee; Carl Lumry, member of the trade barriers committee; Bj. Loss, past president of the Minnesota State Nurserymen's Association, and F. R. Kilner. Lee McClain, chairman of the trade barriers committee, was kept home by the critical condition of his daughter-in-law and the illness of his wife.

The position of the nurserymen was presented by Secretary White, Miles W. Bryant and Bj. Loss. They made it plain that inspection and quarantines were not at issue, but rather those minor elements which interfere to some degree with interstate shipments of nursery stock, such as duplicate invoices and tags, terminal inspection, fees, bonds, etc.

When the question of a federal tag was raised, T. L. Aamodt declared that the Central Plant Board was on record as opposed to it, and George E. Schweis, representative of the Western Plant Board, stated its similar position. General opposition to the proposed federal supervision of inspection developed, though the chairman of the National Plant Board, M. S. Yeomans, made a lengthy defense of that proposal. The result was a definite shelving of the idea of a federal tag.

The representatives of the central and western plant boards called attention to their committees for uniformity in state regulations, which would welcome suggestions from nurserymen toward the elimination of those matters considered an interference to interstate shipments. A chart prepared by Secretary White showing the position of the various states with regard to fees, bonds, tags, etc., was inspected with much interest, and copies were requested for the record.

The afternoon session, at which the nurserymen met with the regulatory officials, concluded with the expression by several of the latter that the coöperation of the nurserymen with regulatory officials was welcome and that the exchange of ideas such as had taken place would prove beneficial.

The morning session of the board was given over to an outline of the activities of the federal bureau of entomology and plant quarantines by Avery S. Hoyt, acting head, Washington, D. C. He was accompanied by J. C. Holton, of the bureau.

Regulatory officials present at the meeting were the following: M. S. Yeomans, Georgia; B. P. Livingston, Alabama; D. F. Farlinger, Georgia; Thomas J. Headlee, New Jersey; T. L. Aamodt, Minnesota; H. F. Seifert, Illinois; E. L. Chambers, Wisconsin; Henry H. Baker, Missouri; Clay Lyle, Mississippi; George E. Schweis, Nevada; W. E. Anderson, Louisiana; Frank McKennon, Oregon; J. I. Griner, Washington; L. M. Gates, Nebraska; R. H. Bell, Pennsylvania; Bert O. Brayton, Missouri, and Carl I. Drake, Iowa.

At the final session, held on the morning of November 12, the following officers were elected for the ensuing year: Chairman, Dr. Carl I. Drake; vice-chairman, Dr. Thomas J. Headlee; secretary-treasurer, B. P Livingston.

COMPARE LAWS' COVERAGE.

This month members of the American Association of Nurserymen, in the news-letter circulated privately to members only, received a comparative summary of the coverage of the wages and hours law and the social security law in their application to nurserymen and employees. Prepared in tabular form in six mimeographed pages, this work of the executive secretary, Richard P. White, should clear up some of the confusion that exists in regard to the different requirements of the two laws.

FROM A. A. N. PRESIDENT.

With the election over, Americans must now unite to make America strong. As an industry and as individuals, we must make up our minds to serve our country to the best of our ability. By doing this, we can probably avoid war with any other country.

Secretary R. P. White seems to have really started something when he called for coördinated effort on the part of state and regional associations with the A. A. N., for we realize now that most of our problems can be solved best by close coöperation of all nursery associations. We shall undoubtedly hear much more of this before the year is over.

When the executive committee met

at the close of the New York convention, committee appointments were discussed. At that time it was suggested that the vice-president be asked to serve as ex officio or advisory member of all standing committees with the exception of the membership committee. This arrangement has definite advantages, and Vice-president Edwin J. Stark has agreed to serve in this capacity. Although it is not likely that Mr. Stark will try to participate actively in all committee work, he will receive all correspondence and will undoubtedly be able to render valuable assistance to the committees during the year.

Avery H. Steinmetz,
President, A. A. N.

PLANTSMAN'S NOTEBOOK.

[Concluded from page 16.]

others who are unfamiliar with this bellflower, let me repeat what I have said before: Although the milky bellflower can be depended upon to bloom the second year from seed, it will give little more than a hint of what a 3-year-old or older clump will do in the way of stem height and flower production. The latter, if well fed, may reach five feet in height and produce its rounded heads in profusion from late June all through July and sometimes longer. It is then a spectacular plant and a valuable one.

It should be mentioned, too, that it varies much in color when grown from the general run of seeds; so one should not exepect all milk-white flowers from the type, nor all pure whites from variety alba. As a matter of fact, they will likely run all the way from deep sky-blue to white. All are good garden ornaments, however, and, unlike most bellflowers, they are also good for cutting.

RECENTLY incorporated was Grand View Nurseries, Inc., Mount Vernon, N. Y., with 200 shares of no par value.

THE Cashman Nurseries, Inc., Owatonna, Minn., now have as general manager State Senator Michael R. Cashman, who had confined his operations to the florists' business for some years. Thomas E. Cashman, Jr., has withdrawn from an official capacity with the company. Mrs. Thomas E. Cashman, Sr., continues as president.

This Business of Ours

Reflections on the Progress and Problems of the Nurseryman—By Ernest Hemming

A SHOW WINDOW.

We asked a local merchant with a centrally located show window if we could display a branch of the Chinese chestnut with burs, etc., in his window. He kindly obliged, and the exhibit created considerable interest and sales. Two of the merchant's salesmen later told us that they never had so many people stop and look in their window, and the merchant himself offered us the opportunity to display additional plants, perhaps realizing that it hadn't done him any harm; it was originally offered as a friendly gesture.

We endeavor to keep an attractive show ground at our highway entrance, but individual plants are lost in the mass, or at least their striking characteristics are not so pronounced. Since we are two miles from town, many persons do not get to see these show grounds frequently.

The idea occurred to us that if we could display certain individual plants when they are at the peak of their beauty, perhaps they would attract unusual attention.

Right now in the nursery the beautiful red-berried Photinia villosa, the purple Callicarpa purpurea, the red Ilex verticillata are at their best. These plants growing in the nursery are too often in sections not so easily seen, but imagine a 2 to 3-foot specimen Ilex verticillata just laden with berries in an attractive setting in a show window.

Concerns combining nursery and florists' business do this sort of thing themselves, but a nursery, especially if located in the country, would surely find it profitable even to pay rent for such a window.

Besides the berried plants in the fall, there are unusual foliaged plants to exhibit. In winter, the many unusual broad-leaved evergreens could be shown, especially in the south. Throughout the spring, summer and early fall, the many flowering shrubs, especially the new choice and unusual ones, of which we have so many these days, could be shown.

When exhibiting these plants, besides one's name on the card, the name of the plant with a few interesting details might be included. If the window were rented for this purpose, it might be worth while to include the price of the plant.

In doing this kind of display advertising, the accent should be on unusual and spectacular material, or else the exhibit becomes just a bouquet of flowers. The local theater wanted us to put flowers in its lobby, to which we could add a sign, but we refused because that is merely decorating their place of business for nothing.

There are numerous plants that nurserymen sell which have certain desirable characteristics and which upon reaching maturity display additional ones. For instance, we sell the little broad-leaved evergreen loniceras, pileata and nitida, as foliage plants, but older plants have dark purple translucent berries. Similary, the silver thorn, Elæagnus pungens, is desired for its foliage, but its flowers are more fragrant than Viburnum Carlesii.

Here are some of the plants I can mentally picture in that show window: William Toovey crape myrtle in flower, double-flowered pomegranate in flower, pyracanthas laden with berries, Viburnum Carlesii and Burkwoodii in flower, nandina with its tremendous cluster of berries (not excluding the unusual yellow-berried form), the Japanese Judas in flower, a small specimen Nyssa sylvatica with its fall foliage of scarlet and many others. I should not overlook tubbed or potted floribunda roses, either. The list is endless.

Like most ideas, this one can be adapted to your own situation. It has worked so far. E. S. H.

NEWS NOTE.

The ladies in our town had a sale of plants to raise money for the church. Renting an empty store, they dug surplus plants out of their own gardens. Perhaps some members of the trade would frown on this, but it is doubtful if it affects the business. In fact, it is more likely to increase interest in plants, but the item that attracted my attention was liquid cow manure in cans. Maybe the ladies have started something.

STICK FRUIT TOO TIGHT.

Results in the tests of hormone sprays to prevent the drop of apples in orchards have been so surprising, even to the plant experimenters who have developed the treatment, that the United States Department of Agriculture has felt it necessary to issue a warning against using too much of the chemical. Too strong a spray, says L. P. Batjer, of the bureau of plant industry, is likely to "stick" the fruit too tight, so that there may be difficulty in picking. The quantity of spray needed "is so slight as to be almost unbelievable."

A spray containing one one-thousandth of one per cent of the pure hormone is as strong as is safe. This is equivalent to dissolving about one teaspoonful in 100 gallons of water. Half that strength will prevent the drop. Since the effective period is only from two to three weeks for most varieties, the hormone sprays should be applied first at the beginning of the harvest drop.

The two chemicals that have proved outstandingly effective in preventing the dropping of apples before they have time to ripen and color on the tree are known as naphthaleneacetic acid and naphthaleneacetamide, now offered under various brand names.

TEXAS SHORT COURSE.

The first short course for nurserymen offered at the Texas A. & M. College, October 31 to November 2, attracted an attendance of between seventy and eighty, besides local registration. Dean E. J. Kyle, of the college of agriculture, welcomed the group, and members of the station staff talked on soils, fertilizers, plant diseases, insect pests and the like. On the program were J. F. Rosborough, M. K. Thornton, Dr. J. C. Ratsek, Dr. L. G. Jones, Dr. J. F. Fudge, Dr. S. H. Yarnell, Dr. A. A. Dunlap, Dr. Walter S. Flory, Dr. Walter N. Ezekiel, G. E. Alstatt and others.

PERMISSION has been granted Algy Unruh, Corona, Cal., to establish a nursery at 1202 West Sixth street. A building will be erected with a 30-foot front and a 16-foot depth.

Diseases of Trees

Latest Findings on Various Infections of Trade Importance Reported in Recent Research Studies — By Leo R. Tehon

SWISS NEEDLE CAST OF FIR.

A curious relationship between host, disease and climatic conditions seems to be expressed in the circumstances attending the present distribution of the Swiss needle-cast disease of Douglas fir, the facts concerning which have been brought out in a study just published by Dr. J. S. Boyce, professor of forest pathology at Yale University. The cause of this disease, a fungus known as Adelopus gæumanni, is native in far western parts of the United States and Canada where, although parasitic on the Douglas fir, it is practically harmless. It has, however, been introduced into northeastern states and certain parts of Europe, and it has come to be recognized there as an injurious and sometimes quite destructive parasite.

On the Pacific coast in late spring and early summer, when the Swiss needle-cast fungus is producing its spores, precipitation is usually meager, often almost lacking. In that region, too, there is generally only an occasional shower or even complete lack of rainfall during the remainder of the summer and early autumn. Also, temperatures are rather high. Thus, weather conditions in the native range of the Douglas fir tend definitely to keep the Swiss needle-cast disease in check.

But in the northeastern states where this disease is prevalent on introduced Douglas fir, spring and summer rain occurs frequently, either as heavy to torrential showers or as rainy periods of one to several days' duration. In southern Germany, Switzerland and Ireland, where the disease is still more prevalent and becomes destructive, showers occur almost daily, the sky is frequently cloudy and the temperature is generally moderate.

These differences appear, when taken together with the fact that in the regions named the Douglas fir is an introduced, exotic species likely, on that account, to be unusually susceptible to disease attack, greatly to favor the disease.

Swiss needle cast, a disease native to American Pacific coast regions, attacks only Douglas fir. It received its name from having been first reported in 1925 as destructive to a number of 20-year-old Douglas firs at Hardern, near Lyss, in the canton of Berne, Switzerland. Since that time it has appeared in southern Germany, in what was Austria, in Denmark, in England and in Ireland, becoming increasingly abundant and destructive in these regions.

In the United States it has been transported with Douglas fir, possibly directly on nursery stock, from the Pacific coast region, where it occurs throughout the native range of the tree, to Connecticut, Rhode Island, Massachusetts, Vermont, New Hampshire and Maine. Although in the latter region it is not yet extensively destructive, in the opinion of Professor Boyce it is potentially dangerous. Concerning it, he writes:

"Douglas fir, Pseudotsuga taxifolia, is economically the most important single tree species in North America. Because of its rapidity of growth it has been widely planted in western Europe, where there has been a constant attempt for over two centuries to introduce additions to the relatively few and slow-growing native species with their wood of restricted technical value. Exotics are always exposed to new diseases that may prove disastrous not only to the tree in its new environment, but may also be introduced into its native range with unfortunate consequences. This has been the history of eastern white pine, Pinus strobus, and the blister rust fungus, Cromartium ribicola. Consequently, when a new disease of an important American tree is reported abroad it is imperative that it be given serious consideration."

On Douglas fir severely attacked by Swiss needle cast the most conspicuous symptom is the exceedingly thin foliage, a condition resulting from the loss of many needles. Often only 1-year-old and current season needles remain on the tree; frequently this remaining foliage bears a general yellowish to brownish tint. On close examination, needles 1 year old and older vary from yellow or yellow-mottled green to brown, depending on the length of time they have been infected. On the undersurface of diseased needles the black spore-bearing structures of the needle-cast fungus, readily seen with a hand magnifier, appear as two sootlike streaks, one on either side of the middle nerve.

Although no definite means for controlling the Swiss needle-cast disease has been worked out, it appears that at least in Europe a marked variation in ability to resist attack exists among individual trees. While this fact may have as its basis the origin of the trees concerned—that is, whether they are of the coastal, intermountain or mountain forms of Douglas fir more or less commonly recognized—it still suggests the possibility of developing and using a resistant Douglas fir type.

ON JAPANESE CHERRY.

For several years Japanese cherry trees, Prunus serrulata, planted on Duke University campus have been infected with a twig disease marked by the presence of tiny black pustules on young twigs. First evidence of the presence of this disease appears toward the end of July, when the black pustules begin to appear. As time goes by, the pustules enlarge and under microscopic examination become recognizable as the beginnings of the spore-producing structures of a fungus. Spores for reinfection are not, however, formed until the following March or later.

The fungus present in the twigs, according to the report of E. S. Luttrell, is one never before described, and he has given it the name Catenophora Pruni. It lives entirely in the epidermal cells of young twigs and never penetrates more deeply. Since it causes little if any injury to the tree, no control measures have been suggested. L. R. T.

JOSEPH W. WARE, Puyallup, Wash., recently celebrated his one hundredth birthday anniversary with open house at his home. He is the last surviving member of the L. C. Ladd post of Civil war veterans and enjoys good health.

THE San Francisco board of park commissioners has accepted a fund of $20,500 to develop a rhododendron and azalea dell in Golden Gate park to be dedicated to John McLaren, 93-year-old superintendent of parks. The work, it is reported, will start immediately. The fund was established in 1926 by Herbert Fleishhacker. Since then friends of Mr. McLaren have swelled the fund by contributions.

Azalea Quarantine

Special Meeting Held at Houston by Nurserymen to Discuss Enforcement of New Texas Regulations

In accordance with notices which had gone out to the nurserymen in and near Houston, a special called meeting was held Friday afternoon, November 8, at the Harris county court house, Houston, Tex., for a detailed discussion of state quarantine 129 as revised, effective November 6, pertaining to the azalea flower spot disease, a fungus known as Ovulinia azaleæ, which attacks the blooms of the azalea and causes much interference in the industry in the gulf area.

J. M. Del Curto, chief of the division of plant quarantines of the state department of agriculture, together with several of his assistant inspectors in the regulation and control department, attended this meeting. Some thirty nurserymen were in attendance from the Houston and Beaumont territories.

Mr. Del Curto opened the meeting by stating that the group had assembled for the further study of the quarantine and its effectiveness and to discuss the regulation and how it would be put into effect. As he would represent the department in the discussion, he suggested that the group select a chairman.

The group responded by nominating O. J. Anderson, president of the Houston Landscape and Nurserymen's Association, who remarked, in taking the chair, that the Houston association had appointed a committee to see what could be done in regard to control of the spread of the disease and it had resulted in the eventual passage of the quarantine.

Frank Cornelius, Sr., stated that a group of nurserymen had met in his office in Houston about a week or ten days before for a discussion of the quarantine. They could not see how such a quarantine could affect just two counties in Texas when the traffic from the east passed through several other counties before Harris and Galveston counties were reached.

Mr. Del Curto took the floor, upon request, and stated that he wanted this quarantine left largely with the nurserymen themselves, from which request for it came. He recalled his meeting with Houston nurserymen in the spring on their urgent request for discussion of the diseases and methods of control. He recalled Dr. Dunlap's visit at the same time, when he made a detailed and scientific report on the disease. Mr. Del Curto referred to the evidence which had been presented in the earlier meetings of the threat to the azalea industry in the gulf coast area by the disease. He further reported his findings in reference to the advanced stages of the disease in states where azaleas are grown east of the Texas line and his efforts to bring about some measure of control.

He said scientific research had shown that measures of control formed the problem confronting the group all the time. The quarantine was put into effect, requiring the removal of all open buds or flowers at time of shipment, as well as treatment by spraying or dipping.

Referring to the amended quarantine, he said that after study of the first issue he could see no reason for confining the limits of it in Texas to two counties. Mr. Del Curto closed by saying that the nurserymen had asked his department for help, and he considered that it had carried out their requirements. Now he wanted a discussion on the standing of the quarantine as revised and whether any further changes were considered necessary.

Dr. A. A. Dunlap, chief of the division of plant pathology of the state agricultural experiment station, recited his findings in regard to the disease in Houston in coöperation with the nurserymen who asked for the department's assistance. He thought an appropriation could be obtained from the state through legislative action to establish at Houston or some convenient point facilities for further research on this and other diseases.

Frank Cornelius, Sr., presented a list of nine questions to Dr. Dunlap, who answered them. In closing his questions, Mr. Cornelius stated that he did not think sufficient information was available on the disease to warrant the quarantine.

Mr. Del Curto said he could not overlook the fact that the group of nurserymen from Houston had asked the department for help on a devastating disease and, now that it had been worked out, he would not see but it was worthy of consideration.

A motion was made by Mr. Cornelius and seconded by Fred Teas to appoint a committee to contact the proper authorities in a plea for funds to carry on research in this disease and its control. This motion was favorably acted upon.

Others present speaking in favor

of the quarantine were R. N. Moseley, W. C. Griffing and Mancill Allen. In a vote fifteen were for keeping the quarantine in effect, and two were against. Mr. Cornelius and Mrs. T. B. Foster, who voted against the measure, were then asked by Mr. Del Curto if they would join the ranks of the others if he agreed to keep an inspector in Houston and vicinity the whole season, and when they agreed Mr. Del Curto introduced the new inspector assigned to the territory. W. G.

TEXAS COMMITTEES.

Ross R. Wolfe, president of the Texas Association of Nurserymen, has appointed committees for the year 1940-41. The official roster and the appointed committees, the first member named being chairman, are as follows:

President, Ross R. Wolfe, Stephenville; vice-president, B. E. Williams, Dallas; secretary and treasurer, Harvey Mosty, Kerrville. Executive committee—J. M. Ramsey, Austin; Ralph Griffing, Beaumont; Leonard Riggs, Longview; Gus Lingner, San Antonio; Howard Locke, New Braunfels; Jesse D. Breedlove, Tyler; A. C. P. Tyler, Beaumont; Phil Scherz, San Angelo.

Legislative—J. M. Ramsey and all members of the executive committee.

Obituary—Miss Wilma Gunter, Beaumont.

Special horticulture — Grady Brown, Dallas; J. O. McKnight, Kerrville; Leonard Riggs; J. M. Ramsey; J. M. Del Curto, Austin; Wise Adkisson, Greenville.

Membership—B. H. Derrick, Waco; S. C. Kidd, Tyler; J. L. Rainey, San Angelo; Wash Storms, Alice; Miss Wilma Gunter, Beaumont; Leonard Riggs; Howard Locke; Oscar Gray, Arlington; B. E. Williams, Dallas; Wymore B. Downing, Wichita Falls; E. C. Trauernicht, Fort Worth; Stephen Verhalen, Scottsville.

Publicity — Harvey Mosty; Hally B. Hampton, Fort Worth; Mrs. Lawrence Hamrick, San Saba; Mrs. H. J. Chamberlain, San Angelo.

Finance—Ray Verhalen, Scottsville.

Tax-supported nurseries—Edward Baker, Fort Worth; Ray Verhalen; B. E. Williams; J. M. Ramsey; Harvey Mosty.

Grades and standards—C. C. Mayhew, Sherman; Ross R. Wolfe; A. L. Thomson, Tyler; Lee Mosty, Center Point; Edward Baker; G. A. McKee, Jacksonville.

Transportation—Edward Baker; George Verhalen, Scottsville; B. H. Derrick, Waco.

Nomenclature—S. H. Yarnell, College Station; J. E. Rosborough, College Station; Frank Hoffman, Jr., Somerset; H. D. Henderson, Athens; W. M. Peters, Stephenville.

Recording early history of nursery industry in Texas—W. C. Griffing, Beaumont; Edward W. Knox, San Antonio; J. B. Baker, Fort Worth; Sam P. Ford, Tyler; P. A. Winkler, Beaumont.

National legislative council, A. A. N.—Edward Baker.

Arboretum — Edward Teas, Houston; Mrs. Hally B. Hampton; Eugene Howard, Austin.

Espalier Fruit Trees

Root System, Scions of Dwarf Stock and Proper Training and Pruning Important—By L. Kochlin

For a number of years, commercial nurserymen in the United States have attempted to grow espalier fruit trees. Success in producing these trees, ones which were satisfactory, has been limited. History will show that espalier trees in Europe have been grown and improved upon over a great length of time. The men who perfected this type of tree spent their entire lives at this work.

Failure has been due largely to three causes — improper foundation, improper scion and lack of knowledge of training and pruning. All three of these items are indispensable and must be combined to get a perfect tree. If one is neglected the entire effort is lost.

The root system, as we all know, must be of the correct dwarf type and must be of hardy stock which has been tested to withstand adverse weather conditions. These items require trying and proving not only in the growing field, but in different locations as well.

Equally important is the fact that the scions must be fully dwarfed. Unless the scions are of dwarf stock from European parentage, there is a long tedious task ahead to dwarf the local varieties to fit the real espalier picture. Most apples require from ten to twelve generations of propagation to become really dwarfed, some varieties more; plum and cherries require approximately the same time; pears, about eight years.

Training and pruning of the tree start in the field during the first summer's growth and have to be done to produce the desired shape and to promote fruit spur development. During the past summer, while en route to the nurserymen's national convention at New York city, it was my pleasure to visit one of the largest nurseries I have ever seen. There I saw growing some espalier trees, mostly pears. They were well cared for and wonderfully trained, but these trees plainly showed too heavy growth. To me, it proved that improper scion stock had been used. Imagine what would happen to those trees when transplanted to home gardens, where usually they receive more water then is needed. Growth would be much more rapid than in the field, and soon the limbs would revert to type and be out of control.

In our own growing field, where we do not irrigate, our trees grow exceptionally slowly, but are healthy and bear well. We have been trying for twelve years to make espaliers from our favorite local varieties. We have been successful with a few, but not all, and are still working on the more difficult ones. Because of the slow growth of the trees, it has been our policy to sell them according to age rather than size.

The same facts apply to dwarf fruit trees. Many are sold having dwarf foundations, but with scions that have not gone through a thorough dwarfing process. We have found that scions from standard stock will dwarf about ten per cent each year; so it is evident that upon a dwarf root a standard scion will still produce a ninety per cent standard tree. For use in city homes dwarf and espalier trees must be dwarfed 100 per cent. For use in commercial orchards, dwarfs are satisfactory when dwarfed from fifty to sixty per cent, or from five to six generations. One generation of about ten per cent is not sufficient.

The field for the growth and development of espalier trees in America is large. The idea is young and means new business to nurserymen. Expansion has been rapid, and demand is steadily growing. This new business will continue to prosper unless it is spoiled by the use of improper and undesirable stock. This is quite decidedly a specialty line. Unless a nurseryman has ample room to provide space for a complete line of all varieties of fruits, unless he has the time and willingness to develop a true strain and unless he has a thorough knowledge of care and training, he should obtain his stock from some firm which makes a specialty of growing espalier fruit trees.

BORN to Mr. and Mrs. J. O. McKnight, November 6, William Harvey McKnight, weight nine pounds, is a grandson of Mr. and Mrs. Harvey Mosty, of Mosty Bros., Kerrville, Tex. J. O. McKnight is a graduate landscape architect and is working with the Mosty nursery at Kerrville. He also has a 3-year-old girl, Joyce Ann. "Mother and baby are doing fine. Granddad is expected to recover," comes the report.

POUND OF NITROGEN FEEDS APPLE TREE YEAR.

A 600-pound crop of apples from a vigorous tree 25 years old removes about one-third of a pound of nitrogen from the soil. For growth of its wood, bark and roots such a tree uses about one-half pound of nitrogen. The leaves use from one-half pound to a pound of nitrogen in their growth and development, but this is restored to the tree and soil and is not ultimately removed from the orchard. So—if loss of nitrogen by leaching can be prevented—a pound of actual nitrogen a year for a tree in full bearing is an ample supply. Too much nitrogen checks the desirable coloring of the fruit. About six pounds of nitrate of soda or five pounds of sulphate of ammonia would supply a pound of nitrogen.

A study by Dr. J. R. Magness, of the United States Department of Agriculture, included chemical analysis of various parts of the tree at frequent intervals during the year. Analysis showed that a thrifty well fed tree absorbs and stores nitrogen, particularly in its roots, and releases this reserve in the weeks when new growth is occurring and leaves are expanding, and when more nitrogen is required than the tree can be expected to draw from the soil in this peak period.

LIGHTER CLOVERSET POT.

To its well known line of Cloverset pots, the firm of Ernest Haysler & Son, Cloverset Flower Farm, Kansas City, Mo., has added one of lighter weight for perennial and greenhouse plants. This new No. 0 Cloverset pot is five inches in diameter at the top, four and one-half inches at the bottom and five inches high, having about the same capacity as a 6-inch clay pot.

The firm intends growing most of their perennials in such pots and using them in the greenhouses for growing those plants formerly produced in 4, 5 and 6-inch clay pots. The time of knocking the plants out of the clay pots and wrapping them will be saved, as the customers will carry away the pots with the plants. Economy of time and labor, as well as easier handling by the customer, will result.

Test Gardens Needed

Benefits from Proper Construction and Location of Trial Plantings of New Varieties—By Paul Swoboda

In your issue of September 15 I read about the newly formed Oriental Poppy Society. With much pleasure I took notice that this society has planted a trial garden of 250 varieties, in order to determine which are the best.

For years I have advocated such test gardens for the benefit of horticulture, because my experience taught me how extremely difficult it is to check up varieties and to decide which are improvements and superior to old varieties when they are not planted together, but one is forced to visit nurseries far apart in order to see them and finally form a decision.

This applies not only to Oriental poppies, but to many other flowers. Look over the long lists of irises, peonies, phlox, hardy asters and chrysanthemums, as well as the long lists of annuals in our seed catalogues. Add to these the European varieties, and the picture becomes more difficult yet. Up-to-date trial gardens are the only means to meet this situation. There tradesmen and amateurs could see the material and form their own opinions, discovering which varieties they like best and consider best suited for their purposes. Competent men should be appointed to check and compare, and bulletins should be issued with their findings. Old varieties of which there are superior improvements should be discarded; for varieties not hardy, similar perfectly hardy ones should be recommended instead. If several such gardens were located under various climatic conditions in different parts of the country, data could be exchanged, valuable information as to growth and hardiness obtained, and the correct material for each region recommended. Further, popular votes on many varieties, when in bloom, could be taken; thus important leads as to the public's taste and likings would be established, valuable to the producers.

Schools of horticulture should be the ideal spots for such gardens. The students might work in them and so acquire a wide knowledge of the newest and best varieties, how to grow them and how to use them, and of the propagation of an abundance of material. Students with such a background would certainly be welcome to the trade, and of real assistance in growing, landscaping and selling. No doubt, full coöperation would be given by the trade to such an enterprise, not only to contribute to the development of horticulture, but also to give wider publicity to its own newly originated varieties.

In constructing such gardens, the principal points—checking, comparing, adding new varieties, discarding old ones—must be kept in mind. I remember the simple and effective manner in which tulips were shown at London. They were planted in beds three or four feet wide, colors arranged together, enough of one variety to create a distinct color spot from a certain distance. Wide, comfortable walks of lovely green lawn between the beds and narrower strips of the same material separating the varieties in the beds contributed to the impressive setting.

Similar ideas can be adopted for perennials, annuals and many nursery items, with the necessary changes in regard to habit and growth of each variety. Shade-loving plants must be placed together, the shade either constructed artificially or created by adaptable nursery stock intended for the garden. Such a layout should be inspiring work for any landscape architect.

Groups of plants of which there are no similar plantings existing should be selected for the start. Roses may be omitted, because our leading specialists have constructed admirable show gardens for years in wise foresight. The yearly increasing number of visitors to such gardens, not to mention the instructive show plantings of hardy chrysanthemums of well known firms, gives definite proof of the interest taken by all those concerned with horticulture.

MEET AT LOS ANGELES.

With forty-five members in attendance, the nurserymen's division of the Southern California Horticultural Institute met at the Cabrillo hotel, Los Angeles, October 24, for dinner and a business meeting, at which was the best attendance on record.

Chairman H. J. Scherer, who had just returned from the state convention, introduced Harold Ryan, agricultural commissioner of Los Angeles county, who discussed convention happenings and directed a round-table discussion on the pink tag law.

Byron H. Dawson, advertising manager of Sunset Magazine, was unable to attend as scheduled, and his talk was postponed until the November meeting, to be held at the same place November 26.

Dr. F. P. Baeyertz, director of the newly established Association Laboratory, horticultural advisor, at Anaheim, Cal., talked on the problems of pests in the nursery and ways and means of eradication.

WASHINGTON NOTES.

Harold Hopkins, Hopkins Nursery, Bothell, has completed a 3-room addition to his dwelling.

Endre Ostbo, Bellevue, rhododendron specialist, is completing a new lath house and driving a new delivery truck.

Robert Tindall, Tindall Nursery, Bothell, has returned from an eastern trip to New York and other points.

C. Wieting, instructor at the Edison vocational school, Seattle, has placed apprentices with the nurserymen.

H. W. Wells, Wells Nursery, Mount Vernon, reports a fine business potting 27,000 camellias. This is a new line for him and is he busy? Mr. Wells is the proud father of a 7-pound girl. W. L. Fulmer.

SOUTHWESTERN NEWS.

The Leavenworth Nurseries, Leavenworth, Kan., Carl Holman, proprietor, are constructing an office and storage building of stone and tile.

The Bowman Nursery, Plainview, Tex., is planning to open a retail nursery at Amarillo.

The Mount Arbor Nurseries, Shenandoah, Ia., were low bidders on a roadside improvement project in Adair county, southwest of Des Moines.

The Williams & Harvey Nurseries, Kansas City, Kan., are constructing an iron-frame lath house, 36x64 feet, at their place at Seventy-fifth and Mission road.

The E. Asjes Nursery, Kansas City, Kan., during the past summer remodeled its office and workroom. A unique feature is an arrangement which enables trucks to drive into the workroom for loading.

Reports from the Texas panhandle state that the fall season has been quite dry, in some sections the driest in many years. New Mexico nurserymen also are working under a handicap, since there is a lack of water in the irrigation ditches in the eastern part of the state.

William I. Kell is opening a nursery salesyard at the intersection of U. S. highways 65 and 40 near Sedalia, Mo. This is a busy intersection, and Mr. Kell expects good sales.

ST. LOUIS NEWS.

With the continuous dry weather prevailing, both the landscape men and nurserymen find operations rather difficult. Planting operations have been retarded by the hard digging in both the nursery and on the job. Many of the operators are holding up planting, in anticipation of better conditions in the near future. The first heavy frosts were experienced last week. Considerable precipitation is needed, as the soil is dry as deep as six feet in most cases. Lawns have been a complete failure this fall, except where artificial watering was possible. Seeded lawns did not respond, even where watering was practiced, due to the lack of moisture in the subsoil. In normal seasons, considerable preparation of beds for deciduous planting is under way at this time, but under present conditions this preparation is done with a pick and grubbing hoe, where normally spading is sufficient. While considerable building of the better types of homes has been going on throughout the summer and fall, many in the trade report business below normal for this time of the year. This may be attributed to the unusually warm, dry fall or perhaps to the fact that it was another election year, but nevertheless business is definitely off. With the election over and a good promise of rain, let us hope that things will begin picking up in the near future, regardless of the real cause. The local nurseries are loaded with some of the finest stock produced in years, due to the mild summer and ideal spring, all waiting for buyers and better planting conditions.

The Landscape and Nurserymen's Association of Greater St. Louis held its regular meeting November 4, at the office of Charles W. Fullgraf, Clayton, Mo. Howard E. Ward presided, and all officers were present as well as a good number of the members. Mr. Denning and Mr. Goff, deputy state plant inspectors for this area, were also present. After the routine business, a lengthy discussion was held on the exhibit of an Ozark garden which will be made by the association at the St. Louis flower and garden show in March, 1941. Mr. Fullgraf, chairman of the exhibit, briefly outlined what he had planned and requested several of the members to assist him; all responded favorably. Ralph Miller gave an interesting talk on the treatment of a residence built in a heavily wooded area and how full advantage can be taken of existing features with a pleasing effect. A vote of thanks was extended to

the host, Mr. Fullgraf, after which all enjoyed the refreshments he furnished. Joseph Houlihan, of the Houlihan Nursery, Creve Coeur, agreed to sponsor the next meeting, which will be held on the second Monday in December at Mr. Fullgraf's office, as it is centrally located.

The Greater St. Louis Gardeners' Association held its regular meeting November 5, at the Clayton city hall. William Rebbe presided, and the chief topic of the evening was the exhibit which this organization will sponsor at the flower show next March. A tentative plan of a Washington garden was presented and received with favor by the members.

Mr. Watson, of the Dinsmore Tree Service, reports that his firm has planted about seventy-five large trees this fall, principally American elm and pin oak, and that it is finding digging conditions rather difficult.

Joseph Houlihan, of the Houlihan Nursery, is rather busy, as he has the planting and transplanting of the Manhasset and the Lucas & Hunt housing projects, which are under federal supervision.

Eugene Waldbart, of the Waldbart & Sons Nursery, on Natural Bridge road, reports some stimulation in his business, but finds the dry condition of the soil slowing down the operations. The same report comes from Clarence McGovern, of the McGovern Nursery, Kirkwood, Mo.

Joseph Houlihan, Jr., who is in the propagating department of the Rhode Island Nurseries, Newport, R. I., recently informed his parents that he holds number 158 in the registration for military service, which in reality is number 1 on the call list. He is well prepared for the army, if he should be called, as he graduated with high honors from Christian Brothers' College, at St. Louis, a military school.

John Sanders, of the Sanders Nursery, reports business improving, but feels that a good rain would help matters, both as to sales and in the operation of his business. C. F. G.

THE Shepard Nurseries, Skaneateles, N. Y., have acquired an additional sixty acres of land to continue their recent expansion and built a packing building, 30x40 feet, the past summer. William Kuhl, formerly of Syracuse, N. Y., has accepted the position of sales manager, E. E. Shepard announces.

Coming Events

ON THE CALENDAR.

Itineraries to cover some of the important state and regional meetings the coming winter will soon be made by the nurserymen who travel to them. To assist those individuals, secretaries of state associations are invited to send announcement of date and place, so that it may be included in the next issue along with the following events on the trade calendar:

December 9, Northern Retail Nurserymen's Association, Lowry hotel, St. Paul.

December 10 and 11, Minnesota State Nurserymen's Association, Nicollet hotel, Minneapolis.

January 7 to 9, Western Association of Nurserymen, Muehlebach hotel, Kansas City, Mo.

January 14 to 16, Illinois State Nurserymen's Association, Hotel La Salle, Chicago.

January 22 and 23, Oklahoma State Nurserymen's Association, Hotel Huckins, Oklahoma City.

January 21 to 23, Michigan Association of Nurserymen.

January 27, Kentucky State Nurserymen's Association.

February 5 and 6, Pennsylvania Nurserymen's Association, Roosevelt hotel, Pittsburgh.

TWIN CITY MEETING.

The first meeting of the season of the Twin City Nurserymen's Association was called by President Perl for November 13. After dinner, Professor Granovsky lectured on "Insects Injurious to Minnesota Nursery Crops."

This group of nurserymen of Minneapolis and St. Paul meets monthly from November to March. Election of officers occurs the second Wednesday of December, and a nominating committee has been appointed, according to Ernest F. Sheffield, secretary.

For the association's exhibit at the Minnesota fair it received a check for $100. The exhibit was put up by the Hoyt Nursery.

KANSAS DAY AT COLLEGE.

The fourth annual nurserymen's day program at Kansas State College, Manhattan, November 22, beginning at 10 a. m., includes the following principal topics:

"The 1940 Convention of the A. A. N," by E. R. Chandler.

"The Nurseryman Becomes Sales Conscious," by C. K. Ward.

"Why the Nurseryman Is Interested in Soil Texture," by R. J. Barnett.

"The Industrial Development Commission and State Beautification," by Mrs. Renna R. Hunter.

"Broad-leaved Evergreens," by J. J. Pinney.

"Rabbit Control," by R. C. Johnson, state forester.

Question box.

The members of the Hort Club have made plans for the third annual show, which will be staged November 22 and 23.

The noon luncheon speaker is Professor Troutman, of the public speaking department, K. S. C.

PLAN CHICAGO HOME SHOW.

Chicago's sixth annual home show, the 1941 National House and Garden Exposition, will be held at the Chicago Coliseum, April 19 to 27. According to John A. Servas, managing director, the center area of the main building will be transformed into a delightful spectacle of gardens that will suggest many complete plans and ideas to the home owner and garden enthusiast. Among organizations cooperating with the exposition is the Illinois Landscape Association.

PEACH VARIETY CENSUS.

Elberta is still outstanding in popularity among the varieties of peaches being planted in this country, according to responses received from 105 fruit tree nurseries throughout the country in a survey by an orchardist's magazine.

According to that survey this variety, discovered by Samuel Rumph, Marshallville, Ga., in 1870, a chance seedling of the Chinese Cling, showed a three to one lead in the national rating for yellow-fleshed freestone midseason varieties.

Second to Elberta in this listing is Halehaven, a comparatively new variety, which came from the technique of skillful plant breeding. Other varieties which make up the first twelve yellow-fleshed midseason freestones are J. H. Hale, Golden Jubilee, South Haven, Early Elberta, Hardee, Redelberta, Shippers Late Red, Early Crawford, Rio Oso Gem and Gage, in the order named.

Elberta is the leader in all sections except the northwest, where Redelberta is first choice, and in California, where Rio Oso Gem heads the list. Golden Jubilee is most popular in the northeast, where it stands second, but it ranks among the leaders in every section, dropping as low as seventh only in California. Halehaven is variable in its sectional popularity.

Rochester is ten times as popular nationally as its nearest competitor, Oriole, in the yellow-fleshed freestone early variety list. In the order of their standing, the other leaders in this group are Fisher, St. John, Dewey and Triumph.

At the head of the tabulation of late yellow-fleshed freestones stands Late Elberta, which tops Krummel October, second place holder, by slightly more than a four to one differential. Runners-up in this group include Late Crawford, Hal-Berta, Salberta, Gold Drop, Salwey, Augbert, Lemon Free, Crosby, Halate and Smock.

In the yellow-fleshed clingstone classification, Mikado (June Elberta) is the two to one favorite. Other leading varieties are Peaks, Palore, Arp, Marigold, Sellers, Phillips, Tuskena and Buttercup.

Although Champion is reported as most popular for planting of the white-fleshed freestone types in all

sections except the northeast and south, Belle (Belle of Georgia) outclasses it in national totals due to heavy planting in the latter areas. The lineup, after Belle and Champion, is Hiley, Carman, Delicious, Cumberland, Alton, Radiance, White Hale and Iron Mountain.

Probably the greatest variation in sectional planting for any one group occurs for the white-fleshed clingstones. Greensboro leads in the northeast, Early Wheeler (Red Bird) in the midwest, south and north central states, Mayflower in California and Alexander in the northwest. Place ratings in the south, where more stock of this type is being set than in any other section, are the same as national: Early Wheeler, Mayflower, Early Rose, Heath Cling, Greensboro, Uneeda and Alexander.

Among the nectarines, Quetta and Victoria are almost tied, with Quetta holding a slight lead. Other nationally prominent varieties of this fruit, which is actually a smooth-skinned peach, are Gold Mine, Sure Crop, Fox, John Rivers, Hunter, Boston, Red Roman and Garden State.

One-year-old stock is by far the most popular size for planting. Less than one-twelfth of the nurseries reporting said that they are selling more 2-year-old trees than 1-year-old.

CATALOGUES RECEIVED.

N. Van Hevelingen, Portland, Ore.—Price list of roses, illustrated in full color, 12 pages, 7¾x10¾ inches.

Kiyono Nurseries, Crichton, Ala.—Wholesale price list features mainly azaleas and camellias, illustrated, 48 pages, 4x9¼ inches.

Siebenthaler Co., Dayton, O.—Retail catalogue of general nursery stock and supplies, 120 pages and cover, printed by photo lithography, spirally bound, 4½x7½ inches.

Lindley Nurseries, Inc., Greensboro, N. C.—Price list of general line of stock, 28 pages and cover, 4x9 inches.

Rich & Sons Nursery, Hillsboro, Ore.—Wholesale price list of general line of stock, 24 pages and cover, 4x9 inches; the first issued by the firm in catalogue form.

Mosty Bros. Nurseries, Center Point and Kerrville, Tex.—Wholesale price list of general line of stock, 20 pages and cover, 4x9 inches.

Bolen Florist & Camellia Gardens, Lucedale, Miss.—Wholesale price list of camellias, circular form, 10 pages, 4x9 inches.

Conard-Pyle Co., West Grove, Pa.—Trade price list of roses, including patented and miniature varieties, 8 pages, 4x9 inches.

Texas Nursery Co., Inc., Sherman, Tex.—Wholesale price list of general nursery stock, 60 pages and cover, 5x7½ inches.

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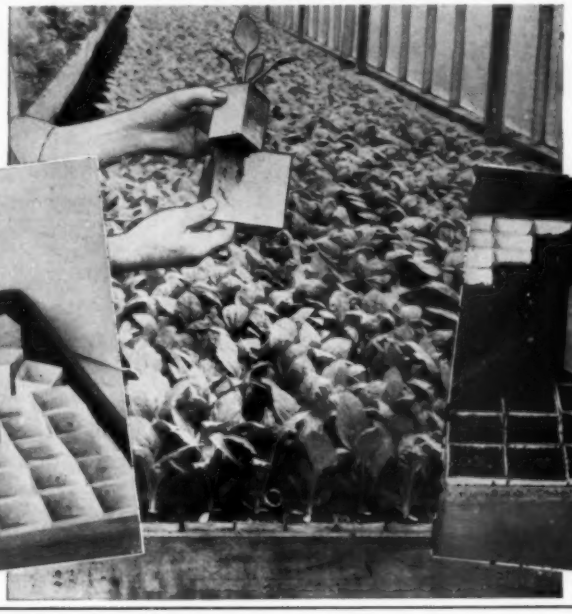

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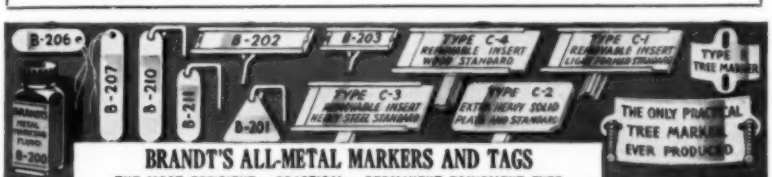

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